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THE RELATIONS BETWEEN CROP YIELDS  
AND PRECIPITATION IN THE  
GREAT PLAINS AREA

SUPPLEMENT 1.—CROP ROTATIONS AND TILLAGE METHODS

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## CROP ROTATIONS AND TILLAGE METHODS

By E. C. CHILCOTT<sup>1</sup>

Formerly Principal Agriculturist, in Charge of Office of Dry-Land Agriculture, Bureau of Plant Industry

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### INTRODUCTION

In Miscellaneous Circular No. 81, the average yields from about 25 plots, subjected to different methods of soil preparation and crop sequence, were used as units of measurement for studying the relations between crop yields and precipitation for each crop at each station. There are many obvious advantages in this method of using average yields rather than the yields from individual plots. In some instances it was considered advisable to use the average of composite yields from three different crops, winter wheat, spring wheat, and oats, grown each year on about 75 plots at each station. These methods of average and composite yields have made possible the presentation of many problems that can best be studied by regrouping the individual plot yields in many different ways. It now seems desirable, therefore, to present these basic figures showing about 30,000 individual yields from 23 field stations.<sup>2</sup>

It is believed, however, that before entering into a detailed study of this mass of statistical matter the reader's attention should be called to the nature of the problems of crop rotation and tillage methods in the

data in the Washington office are as follows: *Present staff*.—Washington, D. C.: J. M. Stephens, E. F. Chilcott, J. S. Cole. Mandan, N. Dak.: Robert Wilson, J. T. Sarvis, W. P. Baird, J. C. Tbyssell, T. K. Killand. Dickinson, N. Dak.: L. Moomaw. Assiniboine, Mont.: G. W. Morgan. Huntley, Mont.: A. E. Seamans. Belle Fourche, S. Dak.: A. Osenbrug. Ardmore, S. Dak.: O. R. Mathews, J. D. Kelso. Sheridan, Wyo.: R. S. Towle. Archer, Wyo.: A. L. Nelson. North Platte, Nebr.: L. L. Zook, H. E. Weakly. Akron, Colo.: J. F. Brandon. Colby, Kans.: B. F. Barnes. Hays, Kans.: A. L. Hallsted. Garden City, Kans.: E. H. Coles. Woodward, Okla.: L. F. Locke. Dalhart, Tex.: H. J. Clemmer. Tucumcari, N. Mex.: D. R. Burnham. Lawton, Okla.: W. M. Oshorn. Big Spring, Tex.: F. E. Keating—27. *Resigned or transferred to other offices*.—Sylvester Balz, F. L. Kennard, J. E. Payne, L. E. Hazen, C. A. Jensen, H. R. Reed, W. O. Whitcomb, C. H. Plath, F. Knorr, R. W. Edwards, H. C. McKinstry, C. A. Burmeister, J. G. Lill, W. W. Burr, J. H. Jacobson, O. J. Grace, M. Pfander, W. D. Griggs, J. E. Mundell, W. A. Peterson, H. G. Smith, L. N. Jensen, A. J. Ogaard, C. B. Brown, L. D. Willey, J. B. Kuska, C. H. Ruzicka, A. W. Schulz, W. E. Lyness, F. A. Wagner, F. E. Cobb, P. V. Cardon, N. O. Henchel, J. W. McLane, O. A. Thompson, Clarence Harris, U. G. Downey, and F. L. Kelso—33. *Deceased*.—I. J. Jensen, formerly at Moccasin, Mont.—1. Total, 66.

The field investigations at Assiniboine and Moccasin, Mont.; Williston, Dickinson, and Edgeley, N. Dak.; Archer, Wyo.; North Platte, Nebr.; and Colby, Hays, and Garden City, Kans., herein described were conducted cooperatively at field stations operated by the agricultural experiment stations of the several States, respectively.

All meteorological and soil-moisture investigations were conducted cooperatively with the biophysical laboratory, Bureau of Plant Industry, L. J. Briggs, biophysicist, J. O. Belz, associate biophysicist.

The late Charles S. Davis rendered valuable assistance in editing the text and arranging the tables and figures for publication.

<sup>1</sup> Died Nov. 14, 1930.

<sup>2</sup> The members of the scientific staff of the Office of Dry-Land Agriculture who have participated in conducting these investigations in the field and in assembling the



Great Plains, as they differ profoundly from those of humid regions.

Much has been written on the subject, but in most instances the authors have dealt with the problems of crop rotations in regions where the soil and climatic conditions are very different from those existing in the Great Plains area. Most of their investigations have been conducted in regions of ample rainfall, where commercial fertilizers, barnyard manure, and biennial and perennial hay and forage crops are the important factors in rotation systems. On the Great Plains none of these factors are of major importance, but the conservation and utilization of the scanty rainfall is of such predominant importance as completely to eliminate some factors and to relegate all others to minor positions. Such being the case, it becomes obvious that the problems of crop rotations and tillage methods on the Great Plains must be approached from a very different standpoint and that very different methods of analysis and interpretation must be developed.

Weir<sup>3</sup> has digested and summarized some of the most important investigations of crop rotation in Great Britain and the United States and reaches the following conclusions:

(1) Crop rotation is so important a farm practice, especially in maintaining and increasing the yields of cereal crops, that its effectiveness may often equal or even exceed the effectiveness of the use of complete chemical fertilizer or farm manure.

(2) The conjoint effects of crop rotation and the use of fertilizers are additive, as effecting increases in crop yields.

(3) The relative efficiency of crop rotation is greater on soils naturally supplied with lime or on soils whose reactions have been altered or changed by liming than on soils that are acid in character.

The soils of the Great Plains are "naturally supplied with lime." The data in these pages contain evidence of the reaction to farm manure on these soils. Such meager evidence as is available concerning the effectiveness of commercial fertilizers is inconclusive. However, if the time ever comes when these rich virgin soils become so depleted as to respond to the application of commercial fertilizers, it may be tentatively assumed that their effects with the rotations will be additive and that the relative effectiveness of the rotations and tillage methods, as shown in the following pages, is a safe index to the effectiveness of more complex rotations that may be elaborated from them on the same general principles. If, on the other hand, it develops that this assumption is not valid and that the effects of fertilizers are not additive, the facts presented in the following pages should provide a foundation upon which to base further investigations.

#### CROP ROTATIONS AND TILLAGE METHODS

The systematic field investigations of crop rotations conducted by the writer may be said to have begun in the spring of 1897, at the South Dakota Agricultural Experiment Station, where he was then agriculturist and vice director. These investigations were described, and results covering six years—1897 to 1902, inclusive—were given in a publication issued in May, 1903.<sup>4</sup>

When the writer was called to Washington in 1905 to take charge of the dry-land agriculture investigations of the United States Department of Agriculture, he was in a position to profit by his past experience in South Dakota, the result of which was that some funda-

mental changes were made in the general plans of the investigations as they had been conducted at the South Dakota station.

It was realized that the major factors in the problems of dry-land agriculture are as follows: (1) Crop sequence; (2) time, method, and depth of tillage in the preparation of the seed bed; (3) the cultivation of summer-fallows and cultivated row crops; and (4) the adaptation of varieties and strains of crops and of implements and methods to the varying combinations of soil, climatic, and economic conditions—particularly cost of labor and market demands and prices—throughout a vast area of fertile land where deficient rainfall is an important factor.

In order to make this study of the basic problems of crop rotation as simple as possible, it was decided to begin with the consideration of 11 systems of crop production, as follows: (1) Continuous cropping with the same crop upon the same land every year; (2) alternate cropping and summer-fallowing with the same crop each alternate year; (3) two 3-year rotations in which a summer-fallow occurs every third year; (4) three rotations in which the corn stubble is disked instead of being plowed in preparing it for the small-grain crop that is to follow; and (5) four rotations in which the land is all plowed and all cropped every year, but with the sequence of crops differing in each instance.

The field layout of plots used for that portion of the investigations above mentioned may be briefly described as follows:

*Continuous cropping.*—Two plots are used for each of the four staple crops grown at each station. One of them is plowed about 8 inches deep in the fall, the other is plowed about 4 inches deep in the spring. Otherwise they are both treated in the same manner. The average of the two plots is used to represent the yields under continuous cropping at each station for each crop.

*Alternate fallowing.*—Two plots are used for each of the staple crops grown at each station. One of them is plowed about 8 inches deep as soon as practicable after the preceding crop is harvested and is given sufficient cultivation with disks or harrows to prevent any appreciable weed growth until the next crop is sown—a period of about 11 months.<sup>5</sup> The other plot is seeded in the spring in a good seed bed on the summer-fallowed land.

*Rotation 1.*—Three plots are used, as follows: Spring wheat seeded on disked corn stubble; oats on early fall-plowed wheat stubble; corn on early fall-plowed oat stubble.

*Rotation 2.*—The same crops in the same sequence are used as in rotation 1, but the ground for each crop is spring plowed.

*Rotation 3.*—Identical with rotation 2 except that the plots are all early fall plowed.

*Rotation 4.*—Identical with rotation 1 except that the oat crop is seeded on the disked corn stubble and is followed by wheat and that in turn by corn, both of the latter on early fall plowing.

*Rotation 5.*—Identical with rotation 1 except that summer-fallow is substituted for the corn crop.

*Rotation 6.*—Identical with rotation 1 except that barley is substituted for spring wheat.

*Rotation 7.*—Like rotation 6, wherein barley is substituted for spring wheat, but in rotation 7 barley follows the oat crop, the oat crop follows corn, and the ground is spring plowed for all three crops.

*Rotation 8.*—Identical with rotation 5 except that in rotation 8 the oat crop is on the fallowed land and wheat follows oats.

*Rotation 9.*—Identical with rotation 2 except that the oat crop follows corn in rotation 9 and wheat follows oats. All three crops are grown on spring plowing. Rotation 9 is also identical with rotation 7, except that in the latter barley is substituted for spring wheat.

It will be seen that the 39 plots above described afford an opportunity to establish the relative values of the several factors indicated as the major ones in the problems of dry-land agriculture, so far as spring wheat, oats, barley, and corn are concerned. It is true that

<sup>3</sup> WEIR, W. W. A STUDY OF THE VALUE OF CROP ROTATION IN RELATION TO SOIL PRODUCTIVITY. U. S. Dept. Agr. Bul. 1377, p. 67. 1926.

<sup>4</sup> CHILCOTT, E. C. CROP ROTATION FOR SOUTH DAKOTA. S. Dak. Agr. Expt. Sta. Bul. 79, 69 p., illus. 1903.

<sup>5</sup> Late spring or early summer plowing has been substituted for early fall plowing for summer-fallow at most of the stations, as it has been found that it reduces cost and usually increases yields.



a number of other crops are of importance in the agriculture of the semiarid regions and that there are many elaborations and modifications of crop sequences and tillage methods that are not represented in this group of 11 distinct systems of crop production. A study of these more complex problems has been provided for in other rotations reported in these pages. But it is believed that an intensive study of these major factors, as exemplified in the simple continuous cropping, alternate cropping, and the nine 3-year rotations, with four staple crops, will serve to bring about a better understanding of the basic principles underlying the theories and the practices of crop rotations and tillage than would result from an attempt to take up at this time the more complex phases of the subject. When the reader has mastered these relatively simple problems, he will find an abundance of material in the accompanying tables for studies of more complex ones.

### THEORY AND PRACTICE OF CROP ROTATION

In order to study either the theory or the practice of crop rotation, it is necessary to establish certain relative values for the crops produced and for the cost of producing them. It is not necessary that these values be mathematically exact provided the standards of measurement are the same for all rotations, for interest lies in the relative rather than the absolute values of the different rotation and cropping systems. The studies presented in Miscellaneous Circular No. 81 have shown that through a long period of years, on a great variety of soils, and under a wide range of climatic conditions certain definite relations exist in the Great Plains area.

The relative yields and the costs of production of spring wheat, oats, and corn are as follows: One bushel of wheat is equivalent to 2 bushels of oats, or  $1\frac{1}{2}$  bushels of barley, or 200 pounds (total dry weight) of corn grain and stover. These crops are therefore reduced to equivalents of bushels of wheat by dividing the acre yields of oats by 2, those of barley by  $1\frac{1}{2}$ , and the total weight of corn by 200.

The cost of the maintenance of a practical summer-fallow is one-half the acre cost of producing a crop of wheat, oats, or corn. These relative values are therefore used in the following comparisons of crop rotations.

As an example of one method of studying the theory and practice of crop rotation and tillage methods based upon these investigations covering 228 crop years, the continuous-cropping series, the alternate-fallow series, and rotations 1 to 9, inclusive, have been selected. They include 33 crops and 6 fallows each year at each of 16 field stations for an average period of  $14\frac{1}{4}$  years, a total of 8,892 plots. The rotations are simple 3-year rotations, and they are so arranged as to facilitate the comparison of different crop sequences and tillage methods.

The five systems of farming under consideration in this study are as follows: (1) Continuous cropping to the same crop year after year; (2) alternate cropping and summer-fallow for each of the three crops (herein designated as "fallow" or "alternate fallow"); (3) continuous cropping of all the land, but rotating the crops so that the same crop is grown on the same land only once in three years, as is done in rotations 1, 2, 3, 4, and 9; (4) substituting a summer-fallow for the corn crop, as is done in rotations 5 and 8; and (5) substituting a barley crop for the wheat crop, as is done in rotations 6 and 7.

The first step is to reduce the four crops to a common denominator or composite crop, which is done by dividing the acre yields of oats (expressed in bushels) by 2, the barley yields by  $1\frac{1}{2}$ , and the corn yields (expressed in pounds of dry weight of grain and stover) by 200. The values thus obtained are added, and this sum divided by the number of crops entering into each rotation, which is 3 for the continuous cropping, for the alternate fallow, and for all of the rotations except 5 and 8. The divisor for rotations 5 and 8 is 2, as only two-thirds of the land is cropped, one-third being fallowed.

Still another correction is necessary to make the rotations comparable. The acre yields obtained by dividing the sums of the yields by 3 in the case of the alternate fallow are again divided by  $1\frac{1}{2}$  to compensate for the cost of the summer-fallow. This process may be shortened by dividing the sum of the yields by  $3 \times 1\frac{1}{2} = 4\frac{1}{2}$ , instead of by first dividing by 3 and then by  $1\frac{1}{2}$ .

The sums of the yields for rotations 5 and 8, which each contain a fallow, are divided, first by 2 as already mentioned and then by  $1\frac{1}{4}$  (or by the shorter method divide the sum by  $2 \times 1\frac{1}{4} = 2\frac{1}{2}$ ). The yields for rotations 1, 4, and 6 are divided by  $3 \div 1.03\frac{1}{2} = 2.9$  to compensate for the decreased cost of disking the corn stubble instead of plowing it.

If the foregoing description is not fully understood, perhaps the following statement will make it clear:

Assume that the entire tillable land of the farm consists of 150 acres. Assume also that it costs \$10 an acre to raise each crop when there is no summer-fallowing. When all the land is cropped every year, whether by changing crops or by continuous cropping to the same crop or crops, the cost of cropping 150 acres is \$1,500.

When the system of alternate cropping and summer-fallowing is practiced, 75 acres are in crop each year and 75 acres are fallowed. The cost of tillage of the cropped plots is  $\$10 \times 75 = \$750$ , that of the fallow plots  $\$5 \times 75 = \$375$ . The total cost, \$1,125, divided by 75 gives \$15 as the acre cost for the cropped land, or one and one-half times as much per acre as under the continuously cropped system.

In the case of the 1-year fallow in three years, as practiced in rotations 5 and 8, where 100 acres are in crops and 50 acres under fallow, the cost is  $\$10 \times 100 = \$1,000$ , plus  $\$5 \times 50 = \$250$ , a total of \$1,250. This when divided by 100, gives \$12.50 as the cost per acre, which is one and one-fourth times the cost under rotation or continuous cropping.

The main purpose of summer-fallowing is to increase the yields of the crops which intervene between fallows in any given rotation. It is immaterial whether the increased yields are confined to the crop that follows immediately after the fallow or whether it is distributed throughout all the crops raised between fallows. The cost of the fallow, therefore, should be prorated between all the crops in the rotation cycle. In the 3-year rotations now under consideration this prorating is to the two intervening crops.

Unless the yields of these intervening crops are increased over the yields which result from continuous cropping in proportion as the cost of production is increased, the introduction of the summer-fallow has no economic justification. Alternate fallowing and cropping will increase the cost of production per acre at least 50 per cent. The yields obtained from land that has been summer-fallowed the previous year should therefore be correspondingly reduced before



comparing them with yields obtained from continuous cropping. This is done by dividing them by  $1\frac{1}{2}$ .

Where two crops intervene between fallows, the increased cost of production is only 25 per cent. The method of prorating, therefore, is to divide the average of the yields of these two crops by  $1\frac{1}{2}$ .

Table 19<sup>6</sup> gives the average yields of all of the crops grown on the continuously cropped plots, on the alternately fallowed plots, and of rotations 1 to 9, inclusive.

These rotations are all 3-year rotations. Spring wheat, oats, and corn are grown on the continuously cropped plots, the alternately cropped plots, and in all rotations except 5 and 8 (in which a summer-fallow is substituted for the corn crop) and in 6 and 7 (in which barley is substituted for spring wheat). The land is all plowed each year for crops except for wheat in rotation 1, oats in rotation 4, and barley in rotation 6, which are grown on disked corn stubble.

TABLE 19.—Average acre yields of spring wheat, oats, corn, and barley at 16 field stations in the northern Great Plains area for number of years shown

[Arranged in geographical order from north to south. The yields in column A (except in rotations 6 and 7) indicate actual average acre yields of specified crops, which in column B are entered as equivalents of bushels of spring wheat per acre. In rotations 6 and 7 barley was substituted for wheat.]

| Field station and crop        |  | Continu-<br>ous crop-<br>ping (to-<br>tal ÷ 3) |       | Alter-<br>nate fall-<br>ow (total<br>÷ 4½) |       | Rotation<br>1 (total<br>÷ 2.9) |       | Rotation<br>2 (total<br>÷ 3) |       | Rotation<br>3 (total<br>÷ 3) |       | Rotation<br>4 (total<br>÷ 2.9) |       | Rotation<br>5 (total<br>÷ 2½) |       | Rotation<br>6 (total<br>÷ 2.9) |       | Rotation<br>7 (total<br>÷ 3) |       | Rotation<br>8 (total<br>÷ 2½) |       | Rotation<br>9 (total<br>÷ 3) |       | Yield<br>aver-<br>age | Years<br>aver-<br>aged |
|-------------------------------|--|--|-------|--|-------|--------------------------------|-------|------------------------------|-------|------------------------------|-------|--------------------------------|-------|-------------------------------|-------|--------------------------------|-------|------------------------------|-------|-------------------------------|-------|------------------------------|-------|-----------------------|------------------------|
|                               |  | A  | B     | A  | B     | A                              | B     | A                            | B     | A                            | B     | A                              | B     | A                             | B     | A                              | B     | A                            | B     | A                             | B     |                              |       |                       |                        |
| Williston:                    |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 11.80  |       | 18.60                                      |       | 14.10                          |       | 14.60                        |       | 13.30                        |       | 17.30                          |       | 16.40                         | 23.80 | 15.87                          | 15.30 | 10.20                        |       | 13.60                         |       | 15.30                        |       |                       |                        |
| Oats.....do.....              |  | 23.60  | 11.80 | 40.60                                      | 20.30 | 30.10                          | 15.05 | 32.00                        | 16.00 | 29.90                        | 14.95 | 43.00                          | 21.50 | 28.40                         | 14.20 | 34.10                          | 17.05 | 30.50                        | 15.25 | 44.80                         | 22.40 | 39.90                        | 19.95 |                       |                        |
| Corn total.....pounds.....    |  | 4,430  | 22.15 | 6,205                                      | 31.03 | 3,751                          | 18.75 | 4,267                        | 21.33 | 3,279                        | 16.39 | 4,481                          | 22.41 | (b)                           |       | 3,420                          | 17.10 | 2,998                        | 14.99 | (b)                           |       | 4,234                        | 21.17 |                       |                        |
| Total.....                    |  | 45.75  |       | 69.93                                      |       | 47.90                          |       | 51.93                        |       | 44.64                        |       | 61.21                          |       | 30.60                         |       | 50.02                          |       | 40.44                        |       | 36.00                         |       | 56.42                        |       |                       |                        |
| Average.....                  |  | 15.25  |       | 15.54                                      |       | 16.52                          |       | 17.31                        |       | 14.88                        |       | 21.11                          |       | 12.24                         |       | 17.25                          |       | 13.48                        |       | 14.40                         |       | 18.81                        |       | 16.07                 | 11                     |
| Assinniboine:                 |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 6.70   |       | 13.20                                      |       | 9.90                           |       | 10.80                        |       | 10.00                        |       | 9.10                           |       | 13.40                         | 17.30 | 11.53                          | 16.40 | 10.93                        |       | 7.20                          |       | 9.90                         |       |                       |                        |
| Oats.....do.....              |  | 16.00  | 8.00  | 29.40                                      | 14.70 | 15.00                          | 7.50  | 19.90                        | 9.95  | 14.10                        | 7.05  | 23.50                          | 11.75 | 16.80                         | 8.40  | 18.00                          | 9.00  | 23.20                        | 11.60 | 27.50                         | 13.75 | 18.10                        | 9.05  |                       |                        |
| Corn total.....pounds.....    |  | 2,964  | 14.82 | 4,475                                      | 22.38 | 2,331                          | 11.66 | 2,661                        | 13.31 | 2,615                        | 13.08 | 2,635                          | 13.18 | (b)                           |       | 2,742                          | 13.71 | 2,925                        | 14.63 | (b)                           |       | 2,610                        | 13.05 |                       |                        |
| Total.....                    |  | 29.52  |       | 50.28                                      |       | 29.06                          |       | 34.06                        |       | 30.13                        |       | 34.03                          |       | 21.80                         |       | 34.24                          |       | 37.16                        |       | 20.95                         |       | 32.00                        |       |                       |                        |
| Average.....                  |  | 9.84   |       | 11.17                                      |       | 10.02                          |       | 11.35                        |       | 10.04                        |       | 11.73                          |       | 8.72                          |       | 11.81                          |       | 12.39                        |       | 8.38                          |       | 10.67                        |       | 10.55                 | 10                     |
| Moecasin:                     |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 14.20  |       | 18.90                                      |       | 19.50                          |       | 18.30                        |       | 18.10                        |       | 16.90                          |       | 20.80                         | 22.90 | 15.27                          | 21.30 | 14.20                        |       | 18.80                         |       | 16.80                        |       |                       |                        |
| Oats.....do.....              |  | 34.10  | 17.05 | 47.10                                      | 23.55 | 33.90                          | 16.95 | 36.70                        | 18.35 | 34.20                        | 17.10 | 40.80                          | 20.40 | 34.20                         | 17.10 | 34.00                          | 17.00 | 38.20                        | 19.10 | 49.30                         | 24.65 | 37.10                        | 18.55 |                       |                        |
| Corn total.....pounds.....    |  | 5,199  | 25.99 | 4,863                                      | 24.32 | 4,447                          | 22.24 | 4,936                        | 24.68 | 4,375                        | 21.88 | 4,468                          | 22.34 | (b)                           |       | 4,008                          | 20.04 | 4,994                        | 24.97 | (b)                           |       | 4,769                        | 23.85 |                       |                        |
| Total.....                    |  | 57.24  |       | 66.77                                      |       | 58.69                          |       | 61.33                        |       | 57.08                        |       | 59.64                          |       | 37.90                         |       | 52.31                          |       | 58.27                        |       | 43.45                         |       | 59.20                        |       |                       |                        |
| Average.....                  |  | 19.08  |       | 14.84                                      |       | 20.24                          |       | 20.44                        |       | 19.03                        |       | 20.57                          |       | 15.16                         |       | 18.04                          |       | 19.42                        |       | 17.38                         |       | 19.73                        |       | 18.52                 | 18                     |
| Huntley:                      |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 10.00  |       | 15.10                                      |       | 15.90                          |       | 14.60                        |       | 14.00                        |       | 13.30                          |       | 23.50                         | 20.40 | 13.60                          | 15.90 | 10.60                        |       | 14.30                         |       | 11.40                        |       |                       |                        |
| Oats.....do.....              |  | 21.60  | 12.30 | 39.80                                      | 19.90 | 26.90                          | 13.45 | 29.10                        | 14.55 | 27.80                        | 13.90 | 34.30                          | 17.15 | 29.20                         | 14.60 | 30.60                          | 15.30 | 32.70                        | 16.35 | 47.30                         | 23.65 | 31.40                        | 15.70 |                       |                        |
| Corn total.....pounds.....    |  | 2,792  | 13.96 | 4,475                                      | 22.38 | 2,922                          | 14.61 | 2,969                        | 14.85 | 2,742                        | 13.71 | 2,741                          | 13.71 | (b)                           |       | 2,814                          | 14.07 | 2,930                        | 14.65 | (b)                           |       | 2,769                        | 13.83 |                       |                        |
| Total.....                    |  | 36.26  |       | 57.38                                      |       | 43.96                          |       | 44.00                        |       | 41.61                        |       | 44.16                          |       | 38.10                         |       | 42.97                          |       | 41.60                        |       | 37.95                         |       | 40.95                        |       |                       |                        |
| Average.....                  |  | 12.09  |       | 12.75                                      |       | 15.16                          |       | 14.67                        |       | 13.87                        |       | 15.23                          |       | 15.24                         |       | 14.82                          |       | 13.87                        |       | 15.18                         |       | 13.65                        |       | 14.22                 | 14                     |
| Dickinson:                    |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 11.80  |       | 20.70                                      |       | 19.80                          |       | 19.80                        |       | 17.40                        |       | 14.80                          |       | 20.80                         | 25.50 | 17.00                          | 19.10 | 12.73                        |       | 15.70                         |       | 14.40                        |       |                       |                        |
| Oats.....do.....              |  | 26.40  | 13.20 | 46.60                                      | 23.30 | 34.70                          | 17.35 | 39.20                        | 19.60 | 32.90                        | 16.45 | 37.90                          | 18.95 | 33.80                         | 16.90 | 32.70                          | 16.35 | 36.50                        | 18.25 | 45.20                         | 22.60 | 31.60                        | 15.80 |                       |                        |
| Corn total.....pounds.....    |  | 3,359  | 16.79 | 3,634                                      | 18.17 | 3,334                          | 16.67 | 3,833                        | 19.16 | 3,083                        | 15.42 | 3,091                          | 15.46 | (b)                           |       | 3,210                          | 16.05 | 3,487                        | 17.44 | (b)                           |       | 3,329                        | 16.65 |                       |                        |
| Total.....                    |  | 41.79  |       | 62.17                                      |       | 53.82                          |       | 58.56                        |       | 49.27                        |       | 49.21                          |       | 37.70                         |       | 49.40                          |       | 48.42                        |       | 38.30                         |       | 46.85                        |       |                       |                        |
| Average.....                  |  | 13.93  |       | 13.82                                      |       | 18.56                          |       | 19.52                        |       | 16.42                        |       | 16.97                          |       | 15.08                         |       | 17.03                          |       | 16.14                        |       | 15.32                         |       | 15.62                        |       | 16.22                 | 19                     |
| Mandan:                       |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 12.00  |       | 19.90                                      |       | 15.70                          |       | 16.90                        |       | 14.40                        |       | 12.80                          |       | 19.60                         | 22.80 | 15.20                          | 21.10 | 14.07                        |       | 14.60                         |       | 15.60                        |       |                       |                        |
| Oats.....do.....              |  | 26.40  | 13.20 | 49.90                                      | 24.95 | 28.70                          | 14.35 | 34.50                        | 17.25 | 29.10                        | 14.55 | 33.60                          | 17.80 | 30.00                         | 15.00 | 29.70                          | 14.85 | 36.60                        | 18.30 | 49.90                         | 24.95 | 36.40                        | 18.20 |                       |                        |
| Corn total.....pounds.....    |  | 4,425  | 22.13 | 5,149                                      | 25.75 | 4,011                          | 20.06 | 4,208                        | 21.04 | 3,766                        | 18.83 | 3,885                          | 19.43 | (b)                           |       | 3,944                          | 19.72 | 4,316                        | 21.58 | (b)                           |       | 4,108                        | 20.54 |                       |                        |
| Total.....                    |  | 47.33  |       | 70.60                                      |       | 50.11                          |       | 55.19                        |       | 47.78                        |       | 50.03                          |       | 34.60                         |       | 49.77                          |       | 53.95                        |       | 39.55                         |       | 54.31                        |       |                       |                        |
| Average.....                  |  | 15.78  |       | 15.69                                      |       | 17.28                          |       | 18.40                        |       | 15.93                        |       | 17.25                          |       | 13.84                         |       | 17.16                          |       | 17.98                        |       | 15.82                         |       | 18.11                        |       | 16.66                 | 12                     |
| Edgeley:                      |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 11.40  |       | 13.10                                      |       | 16.90                          |       | 15.80                        |       | 17.00                        |       | 14.00                          |       | 16.90                         | 24.20 | 16.13                          | 20.80 | 13.87                        |       | 14.20                         |       | 14.50                        |       |                       |                        |
| Oats.....do.....              |  | 25.80  | 12.90 | 39.30                                      | 19.65 | 29.30                          | 14.65 | 30.90                        | 15.45 | 31.20                        | 15.60 | 33.10                          | 16.55 | 35.60                         | 17.80 | 30.20                          | 15.10 | 34.80                        | 17.40 | 36.10                         | 18.05 | 39.00                        | 15.45 |                       |                        |
| Corn total.....pounds.....    |  | 3,461  | 17.31 | 3,365                                      | 16.83 | 3,798                          | 18.99 | 4,055                        | 20.28 | 3,707                        | 18.99 | 3,677                          | 18.39 | (b)                           |       | 3,710                          | 18.55 | 4,067                        | 20.34 | (b)                           |       | 3,846                        | 19.23 |                       |                        |
| Total.....                    |  | 41.61  |       | 49.58                                      |       | 50.54                          |       | 51.53                        |       | 51.59                        |       | 48.94                          |       | 34.70                         |       | 49.78                          |       | 51.61                        |       | 32.25                         |       | 49.18                        |       |                       |                        |
| Average.....                  |  | 13.87  |       | 11.02                                      |       | 17.43                          |       | 17.18                        |       | 17.20                        |       | 16.88                          |       | 13.88                         |       | 17.17                          |       | 17.20                        |       | 12.90                         |       | 16.39                        |       | 15.56                 | 16                     |
| Sheridan:                     |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 13.20  |       | 23.10                                      |       | 17.80                          |       | 17.30                        |       | 18.00                        |       | 16.10                          |       | 23.60                         | 36.00 | 24.00                          | 35.20 | 23.47                        |       | 16.30                         |       | 16.00                        |       |                       |                        |
| Oats.....do.....              |  | 32.80  | 16.40 | 46.60                                      | 23.30 | 35.60                          | 17.51 | 34.40                        | 17.20 | 35.80                        | 17.90 | 37.50                          | 18.75 | 40.80                         | 20.40 | 37.60                          | 18.80 | 41.60                        | 20.80 | 46.70                         | 23.35 | 38.50                        | 19.25 |                       |                        |
| Corn total.....pounds.....    |  | 2,966  | 14.83 | 3,307                                      | 16.54 | 2,793                          | 13.97 | 2,995                        | 14.98 | 2,954                        | 11.77 | 2,640                          | 13.20 | (b)                           |       | 3,050                          | 15.25 | 2,983                        | 11.92 | (b)                           |       | 2,981                        | 14.91 |                       |                        |
| Total.....                    |  | 41.43  |       | 62.94                                      |       | 49.52                          |       | 49.48                        |       | 50.67                        |       | 48.05                          |       | 41.00                         |       | 58.05                          |       | 59.19                        |       | 39.65                         |       | 50.16                        |       |                       |                        |
| Average.....                  |  | 14.81  |       | 13.99                                      |       | 17.08                          |       | 16.49                        |       | 16.89                        |       | 16.57                          |       | 17.60                         |       | 20.02                          |       | 19.73                        |       | 15.86                         |       | 16.72                        |       | 16.87                 | 9                      |
| Belle Fourche:                |  |  |       |  |       |                                |       |                              |       |                              |       |                                |       |                               |       |                                |       |                              |       |                               |       |                              |       |                       |                        |
| Spring wheat.....bushels..... |  | 14.70  |       | 22.70                                      |       | 17.50                          |       | 13.50                        |       | 15.60                        |       | 16.10                          |       | 22.40                         | 27.80 | 18.53                          | 25.60 | 17.07                        |       | 17.00                         |       | 15.30                        |       |                       |                        |
| Oats.....do.....              |  | 32.90  | 16.45 | 19.50                                      | 24.75 | 33.10                          | 16.55 | 31.00                        | 15.50 | 32.20                        | 16.10 | 39.30                          | 19.65 | 33.80                         | 16.90 | 35.40                          | 17.70 | 35.80                        | 17.90 | 52.60                         | 26.30 | 35.00                        | 17.50 |                       |                        |
| Corn total.....pounds.....    |  | 3,514  | 17.57 | 4,260                                      | 21.30 | 3,562                          | 17.81 | 3,232                        | 16.16 | 3,633                        | 18.17 | 3,536                          | 17.68 | (b)                           |       | 3,759                          | 18.79 | 3,747                        | 18.74 | (b)                           |       | 3,578                        | 17.89 |                       |                        |
| Total.....                    |  | 48.72  |       | 68.75                                      |       | 51.86                          |       | 45.16                        |       | 49.87                        |       | 53.43                          |       | 39.30                         |       | 55.02                          |       | 53.71                        |       | 43.30                         |       | 50.69                        |       |                       |                        |
| Average.....                  |  | 16.24  |       | 15.28                                      |       | 17.88                          |       | 15.05                        |       | 16.62                        |       | 18.42                          |       | 15.72                         |       | 18.97                          |       | 17.90                        |       | 17.32                         |       | 16.90                        |       | 16.94                 | 18                     |



TABLE 19.—Average acre yields of spring wheat, oats, corn, and barley at 16 field stations in the northern Great Plains area for number of years shown—Continued

[Arranged in geographical order from north to south. The yields in column A (except in rotations 6 and 7) indicate actual average acre yields of specified crops, which in column B are entered as equivalents of bushels of spring wheat per acre. In rotations 6 and 7 barley was substituted for wheat]

| Field station and crop   |  | Continu-<br>ous crop-<br>ping (to-<br>tal ÷3) |       | Alter-<br>nate fall-<br>ow (total<br>÷4½) |       | Rotation<br>1 (total<br>÷2.9) |       | Rotation<br>2 (total<br>÷3) |       | Rotation<br>3 (total<br>÷3) |       | Rotation<br>4 (total<br>÷2.9) |       | Rotation<br>5 (total<br>÷2½) |        | Rotation<br>6 (total<br>÷2.9) |        | Rotation<br>7 (total<br>÷3) |       | Rotation<br>8 (total<br>÷2½) |       | Rotation<br>9 (total<br>÷3) |       | Yield<br>aver-<br>age | Years<br>aver-<br>aged |     |
|--------------------------|--|---|-------|---|-------|-------------------------------|-------|-----------------------------|-------|-----------------------------|-------|-------------------------------|-------|------------------------------|--------|-------------------------------|--------|-----------------------------|-------|------------------------------|-------|-----------------------------|-------|-----------------------|------------------------|-----|
|                          |  | A   | B     | A   | B     | A                             | B     | A                           | B     | A                           | B     | A                             | B     | A                            | B      | A                             | B      | A                           | B     | A                            | B     |                             |       |                       |                        |     |
| Ardmore:                 |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 11.60   |       | 16.40                                     |       | 18.50                         |       | 16.50                       |       | 16.00                       |       | 16.70                         |       | 19.10                        | *25.90 | 17.27                         | *21.30 | 14.20                       |       | 12.80                        |       | 13.30                       |       |                       |                        |     |
| Oats.....do              |  | 24.30   | 12.15 | 36.70                                     | 18.35 | 30.10                         | 15.05 | 29.60                       | 14.80 | 27.80                       | 13.90 | 33.70                         | 16.85 | 31.00                        | 15.50  | 33.30                         | 16.65  | 33.90                       | 16.95 | 35.80                        | 17.90 | 33.00                       | 16.50 |                       |                        |     |
| Corn total.....pounds    |  | 3,488   | 17.44 | 3,645                                     | 18.23 | 3,162                         | 15.81 | 3,097                       | 15.49 | 2,883                       | 14.42 | 3,163                         | 15.82 | ( <sup>b</sup> )             |        | 3,304                         | 16.52  | 3,012                       | 15.06 | ( <sup>b</sup> )             |       | 2,877                       | 14.39 |                       |                        |     |
| Total.....               |  | 41.19   |       | 52.98                                     |       | 49.36                         |       | 46.79                       |       | 44.32                       |       | 49.37                         |       | 34.60                        |        | 50.44                         |        | 46.21                       |       | 30.70                        |       | 44.19                       |       |                       |                        |     |
| Average.....             |  | 13.73   |       | 11.77                                     |       | 17.02                         |       | 15.60                       |       | 14.77                       |       | 17.02                         |       | 13.84                        |        | 17.39                         |        | 15.40                       |       | 12.28                        |       | 14.73                       |       | 14.87                 |                        | 13  |
| Scotts Bluff:            |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 7.10  |       | 14.30                                     |       | 13.00                         |       | 11.20                       |       | 12.30                       |       | 11.00                         |       | 16.50                        | *15.10 | 10.07                         | *17.30 | 11.53                       |       | 9.60                         |       | 10.40                       |       |                       |                        |     |
| Oats.....do              |  | 16.60   | 8.30  | 25.70                                     | 12.85 | 18.60                         | 9.30  | 23.90                       | 11.95 | 18.90                       | 9.45  | 20.30                         | 10.15 | 20.60                        | 10.30  | 18.10                         | 9.05   | 20.60                       | 10.30 | 39.60                        | 13.50 | 26.60                       | 13.30 |                       |                        |     |
| Corn total.....pounds    |  | 2,796   | 13.98 | 3,785                                     | 18.93 | 3,376                         | 16.88 | 3,666                       | 18.33 | 3,163                       | 15.82 | 3,179                         | 15.90 | ( <sup>b</sup> )             |        | 3,146                         | 15.73  | 3,476                       | 17.38 | ( <sup>b</sup> )             |       | 3,367                       | 16.84 |                       |                        |     |
| Total.....               |  | 29.38   |       | 46.08                                     |       | 39.18                         |       | 41.48                       |       | 37.57                       |       | 37.05                         |       | 26.80                        |        | 34.85                         |        | 39.21                       |       | 23.10                        |       | 40.54                       |       |                       |                        |     |
| Average.....             |  | 9.79  |       | 10.24                                     |       | 13.51                         |       | 13.83                       |       | 12.52                       |       | 12.78                         |       | 10.72                        |        | 12.02                         |        | 13.07                       |       | 9.24                         |       | 13.51                       |       | 11.93                 |                        | 9   |
| North Platte:            |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 11.40   |       | 19.00                                     |       | 13.10                         |       | 10.50                       |       | 13.20                       |       | 11.00                         |       | 17.10                        | *15.90 | 10.60                         | *17.90 | 11.93                       |       | 13.60                        |       | 10.50                       |       |                       |                        |     |
| Oats.....do              |  | 24.00   | 12.00 | 36.00                                     | 18.00 | 25.90                         | 12.95 | 22.30                       | 11.15 | 25.80                       | 12.90 | 25.00                         | 12.50 | 23.30                        | 11.65  | 26.10                         | 13.05  | 26.10                       | 13.05 | 39.60                        | 19.80 | 23.80                       | 11.90 |                       |                        |     |
| Corn total.....pounds    |  | 3,796   | 18.98 | 4,323                                     | 21.62 | 4,076                         | 20.38 | 3,383                       | 16.91 | 4,056                       | 20.28 | 3,802                         | 19.01 | ( <sup>b</sup> )             |        | 3,885                         | 19.43  | 3,814                       | 19.07 | ( <sup>b</sup> )             |       | 3,874                       | 19.37 |                       |                        |     |
| Total.....               |  | 42.38   |       | 58.62                                     |       | 46.43                         |       | 38.56                       |       | 46.38                       |       | 42.51                         |       | 28.75                        |        | 43.08                         |        | 44.05                       |       | 33.40                        |       | 41.77                       |       |                       |                        |     |
| Average.....             |  | 14.13   |       | 13.03                                     |       | 16.01                         |       | 12.85                       |       | 15.46                       |       | 11.66                         |       | 11.50                        |        | 14.86                         |        | 14.68                       |       | 13.36                        |       | 13.92                       |       | 14.04                 |                        | 19  |
| Archer:                  |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 8.50  |       | 13.40                                     |       | 12.60                         |       | 11.10                       |       | 8.70                        |       | 9.90                          |       | 13.50                        | *15.33 | 10.22                         | *14.10 | 9.40                        |       | 8.50                         |       | 9.00                        |       |                       |                        |     |
| Oats.....do              |  | 10.40   | 5.20  | 15.00                                     | 7.50  | 17.40                         | 8.70  | 17.60                       | 8.80  | 11.30                       | 5.65  | 22.00                         | 11.00 | 14.80                        | 7.40   | 15.20                         | 7.60   | 21.70                       | 10.85 | 20.00                        | 10.00 | 17.20                       | 8.60  |                       |                        |     |
| Corn total.....pounds    |  | 2,987   | 14.94 | 3,083                                     | 15.42 | 2,491                         | 12.46 | 3,293                       | 16.47 | 2,265                       | 11.33 | 2,600                         | 13.00 | ( <sup>b</sup> )             |        | 2,250                         | 11.25  | 3,487                       | 17.44 | ( <sup>b</sup> )             |       | 2,809                       | 14.05 |                       |                        |     |
| Total.....               |  | 28.64   |       | 36.32                                     |       | 33.76                         |       | 36.37                       |       | 25.68                       |       | 33.90                         |       | 20.90                        |        | 29.07                         |        | 37.69                       |       | 18.50                        |       | 31.65                       |       |                       |                        |     |
| Average.....             |  | 9.55  |       | 8.07                                      |       | 11.64                         |       | 12.12                       |       | 8.56                        |       | 11.69                         |       | 8.36                         |        | 10.02                         |        | 12.56                       |       | 7.40                         |       | 10.55                       |       | 10.05                 |                        | 12  |
| Akron:                   |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 9.00  |       | 11.30                                     |       | 11.80                         |       | 10.80                       |       | 9.70                        |       | 8.70                          |       | 12.70                        | *19.40 | 12.93                         | *17.50 | 11.67                       |       | 7.70                         |       | 8.90                        |       |                       |                        |     |
| Oats.....do              |  | 19.00   | 9.50  | 32.50                                     | 16.25 | 17.20                         | 8.60  | 20.30                       | 10.15 | 17.10                       | 8.55  | 20.20                         | 10.10 | 16.30                        | 8.15   | 18.80                         | 9.40   | 24.90                       | 12.45 | 25.50                        | 12.75 | 19.30                       | 9.65  |                       |                        |     |
| Corn total.....pounds    |  | 2,833   | 14.17 | 3,561                                     | 17.81 | 2,754                         | 13.77 | 2,647                       | 13.24 | 2,623                       | 13.12 | 2,617                         | 13.09 | ( <sup>b</sup> )             |        | 2,607                         | 13.04  | 2,937                       | 14.69 | ( <sup>b</sup> )             |       | 2,504                       | 12.52 |                       |                        |     |
| Total.....               |  | 32.67   |       | 45.36                                     |       | 34.17                         |       | 34.19                       |       | 31.37                       |       | 31.89                         |       | 20.85                        |        | 35.37                         |        | 38.81                       |       | 20.45                        |       | 31.07                       |       |                       |                        |     |
| Average.....             |  | 10.89   |       | 10.08                                     |       | 11.78                         |       | 11.40                       |       | 10.46                       |       | 11.00                         |       | 8.34                         |        | 12.20                         |        | 12.94                       |       | 8.18                         |       | 10.36                       |       | 10.69                 |                        | 17  |
| Colby:                   |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 7.00  |       | 11.20                                     |       | 6.90                          |       | 7.50                        |       | 5.70                        |       | 7.40                          |       | 9.40                         | *16.80 | 11.20                         | *19.10 | 12.73                       |       | 7.60                         |       | 6.50                        |       |                       |                        |     |
| Oats.....do              |  | 17.40   | 8.70  | 29.20                                     | 14.60 | 18.60                         | 9.30  | 19.50                       | 9.75  | 16.70                       | 8.35  | 17.90                         | 8.95  | 20.30                        | 10.15  | 14.60                         | 7.30   | 13.30                       | 6.65  | 27.30                        | 13.65 | 14.90                       | 7.45  |                       |                        |     |
| Corn total.....pounds    |  | 2,833   | 14.17 | 4,335                                     | 21.68 | 2,914                         | 14.57 | 3,822                       | 19.11 | 2,834                       | 14.17 | 3,022                         | 15.11 | ( <sup>b</sup> )             |        | 2,661                         | 13.31  | 3,093                       | 15.47 | ( <sup>b</sup> )             |       | 2,712                       | 13.56 |                       |                        |     |
| Total.....               |  | 29.87   |       | 47.48                                     |       | 30.77                         |       | 36.36                       |       | 28.22                       |       | 31.46                         |       | 19.55                        |        | 31.81                         |        | 34.85                       |       | 21.25                        |       | 27.51                       |       |                       |                        |     |
| Average.....             |  | 9.96  |       | 10.55                                     |       | 10.61                         |       | 12.12                       |       | 9.41                        |       | 10.85                         |       | 7.82                         |        | 10.97                         |        | 11.62                       |       | 8.50                         |       | 9.17                        |       | 10.14                 |                        | 12  |
| Hays:                    |  |   |       |   |       |                               |       |                             |       |                             |       |                               |       |                              |        |                               |        |                             |       |                              |       |                             |       |                       |                        |     |
| Spring wheat.....bushels |  | 5.60  |       | 8.30                                      |       | 7.10                          |       | 5.40                        |       | 6.70                        |       | 6.60                          |       | 9.10                         | *19.00 | 12.67                         | *15.20 | 10.13                       |       | 6.90                         |       | 5.20                        |       |                       |                        |     |
| Oats.....do              |  | 18.00   | 9.00  | 28.30                                     | 14.15 | 22.50                         | 11.25 | 18.40                       | 9.20  | 21.60                       | 10.80 | 23.10                         | 11.55 | 23.60                        | 11.80  | 20.90                         | 10.45  | 21.00                       | 10.50 | 30.10                        | 15.05 | 22.10                       | 11.05 |                       |                        |     |
| Corn total.....pounds    |  | 2,777   | 13.89 | 3,864                                     | 19.32 | 2,933                         | 14.67 | 2,827                       | 14.14 | 2,799                       | 14.00 | 2,852                         | 14.26 | ( <sup>b</sup> )             |        | 2,948                         | 14.74  | 2,438                       | 12.19 | ( <sup>b</sup> )             |       | 2,862                       | 14.31 |                       |                        |     |
| Total.....               |  | 28.49   |       | 41.77                                     |       | 33.02                         |       | 28.74                       |       | 31.50                       |       | 32.41                         |       | 20.90                        |        | 37.86                         |        | 32.82                       |       | 21.95                        |       | 30.56                       |       |                       |                        |     |
| Average.....             |  | 9.50  |       | 9.28                                      |       | 11.39                         |       | 9.58                        |       | 10.50                       |       | 11.18                         |       | 8.36                         |        | 13.06                         |        | 10.94                       |       | 8.78                         |       | 10.19                       |       | 10.26                 |                        | 19  |
| Averages and total.....  |  | 13.03   |       | 12.32                                     |       | 15.14                         |       | 14.87                       |       | 13.91                       |       | 15.24                         |       | 12.28                        |        | 15.17                         |        | 14.96                       |       | 12.52                        |       | 14.31                       |       | 13.98                 |                        | 228 |

\* Barley was substituted for wheat.

† Fallow.

The figures in the 11 double-columns of Table 19 (designated "A" and "B") represent the acre yields for the continuously cropped plots, for the alternately cropped plots, and for each rotation from 1 to 9. The figures representing the wheat yields are entered directly in the right-hand or B section of each pair of columns, except those representing rotations 6 and 7 wherein barley is substituted for wheat. The figures representing the oat, corn, and barley yields are entered in the left-hand or A sections of the respective columns wherever they are used in the rotation. These figures are then each divided by the proper conversion factors, respectively, for each of the three crops—oats by 2, barley by  $1\frac{1}{2}$ , and corn total weight by 200, which converts the figures into equivalents of bushels of wheat per acre. The quotients are entered in the B sections of their respective columns under the wheat yields and added. The totals in the columns representing continuous cropping and rotations 2, 3, 7, and 9 are divided by 3, which gives the average composite acre yield for each rotation. The total in the alternately fallowed column is divided

by  $3 \times 1\frac{1}{2} = 4\frac{1}{2}$ ; the sums for rotations 5 and 8 are divided by  $2 \times 1\frac{1}{4} = 2\frac{1}{2}$ ; and the sums for rotations 1, 4, and 6 are divided by 2.9, to compensate for the difference in cost of production due to fallowing and disking, respectively, as heretofore explained. The averages of the composite yields shown for each of the 11 systems of cropping in Table 19 can then be plotted for each station as has been done in Figure 68, and the relative net productivity of the several systems, after allowing for the increased cost per acre of the systems into which summer-fallowing has been introduced and the decreased cost when disking is practiced, can be plainly seen.

It must be borne in mind that the values represented in both Table 19 and Figure 68 are relative and not absolute. The market prices of the crops raised and the cost of labor involved in their production are constantly fluctuating, both absolutely and relatively. It is therefore obvious that no fixed value can be established for any of the factors involved. It is believed, however, that this method of presenting the relative average returns that may reasonably be expected from these re-



spective systems of farming is as trustworthy as any that has yet been devised. There are, however, other ways of interpreting the facts represented by these figures, and the reader is urged to make his own interpretation. His conclusions may not be the same as those here presented. If some better method than the one used in these computations can be developed, it will be welcomed by all truth-seeking investigators.

### RESULTS AT 16 NORTHERN FIELD STATIONS COMPARED

In studying the tables and figures which follow it must be borne in mind that the lengths of the periods of the investigations at the several stations differ. At Sheridan and Scotts Bluff the period is only 9 years; at

either differences in length of period or adaptability of crops. This matter is further considered on page 11 in connection with Table 24 and Figure 70, where it is shown that comparisons between the relative values of the rotations are not materially affected by these differences in yields at different field stations. These comparisons are between the results from different rotations at the same field station and are expressed in percentages of the mean yields obtained at the respective field stations.

### COMPARISON OF YIELDS OF OTHER CROPS EXPRESSED IN EQUIVALENT YIELDS OF BUSHELS OF WHEAT

In Table 19 the stations are arranged geographically from north to south in conformity with the arrangement

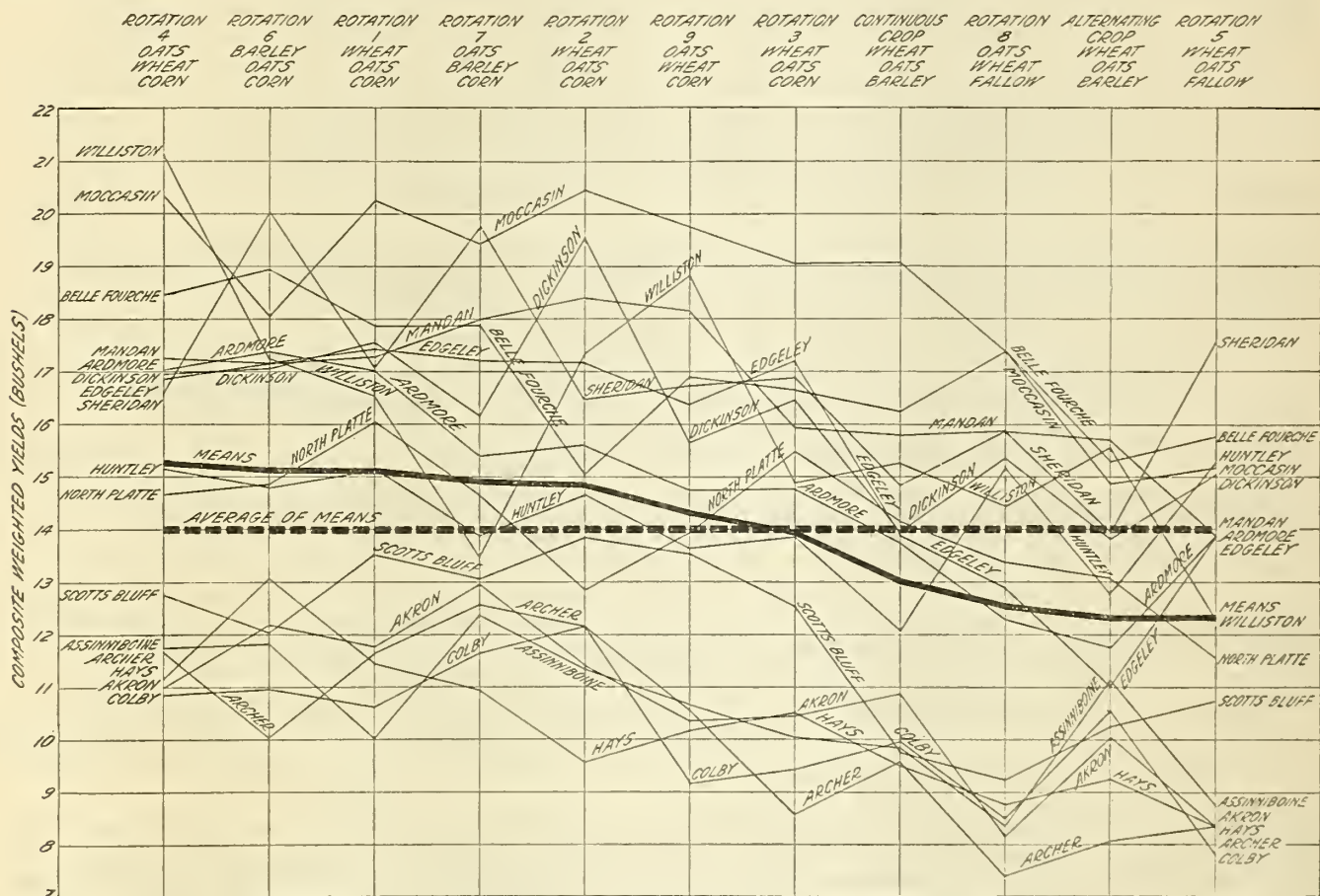


FIGURE 68.—Diagram illustrating Table 20. See text under "Comparison of yields of other crops expressed in equivalent yields of wheat," page 6

Assiniboine, 10 years; at Williston, 11 years; at Mandan, Archer, and Colby, 12 years; at Ardmore, 13 years; at Huntley, 14 years; at Edgeley, 16 years; at Akron, 17 years; at Moccasin and Belle Fourche, 18 years; at Dickinson, North Platte, and Hays, 19 years; as shown in the last column in Table 19.

It will also be noticed that there is a rather wide range in the average returns for the several stations, from 18.52 at Moccasin to 10.05 at Archer. This does not necessarily mean that these figures represent the difference in agricultural possibilities of the regions represented by the respective stations. It simply shows the relative adaptability of these particular crops to the different localities. As interest centers in the relative rather than in the absolute yields, it has not been considered desirable to attempt to weight the figures for

in Miscellaneous Circular No. 81. The yield data for the continuously cropped plots are placed in the first figure column; next the alternately fallowed plots, and then the rotations 1 to 9 in their numerical order. This is not the best arrangement for comparison. Moreover, the composite yields from the different systems of tillage are so scattered among other figures that were used in computing the composite yields, but have no further significance, that it is difficult to find them. Table 20, therefore, has been prepared, in which the stations are arranged according to the magnitude of the average yields—the highest yields at the top and the lowest at the bottom of the table. The averages shown in the right-hand column and near the bottom of Table 20 represent the same values as those in Table 19. It will be observed that the average returns shown



by stations in the right-hand column of Table 20 range from 18.52 bushels at the top to 10.05 bushels at the bottom and that these same values arranged by systems of tillage near the bottom range from 15.24 bushels at the left to 12.28 at the right, with a grand average both by stations and by systems of tillage of 13.98 bushels, as shown at the lower right-hand corner of both Tables 19 and 20.

Table 20, therefore, presents data arranged in convenient form for plotting and comparison. Figure 68 represents graphically the facts shown by the data in Table 20.

It will be noticed by the yields shown by the data at the bottom of Table 20 and by the line marked "means" in Figure 68 that there is a reasonably regular decrease in the yields for the different systems or rotations from left to right. It will also be observed that the 11 systems fall into five rather distinct groups, namely, (1) continuous cropping, (2) alternate fallow, (3) summer-fallowing once in three years, (4) wheat, oats, or barley sown on disked corn stubble in a 3-year rotation, and (5) straight 3-year rotations of corn, oats, wheat, or barley sown on ground plowed every year.

TABLE 20.—Composite acre yields of spring wheat, oats, barley, and corn at 16 field stations in the northern Great Plains area expressed in equivalent yields of bushels of wheat

[Arranged in order of magnitude of acre yields]

| Field station                   | Rotation 4 | Rotation 6 | Rotation 1 | Rotation 7 | Rotation 2 | Rotation 9 | Rotation 3 | Continuous cropping | Rotation 8 | Alternate fallow | Rotation 5 | Total    | Average |
|---------------------------------|------------|------------|------------|------------|------------|------------|------------|---------------------|------------|------------------|------------|----------|---------|
|                                 | Bushels    | Bushels    | Bushels    | Bushels    | Bushels    | Bushels    | Bushels    | Bushels             | Bushels    | Bushels          | Bushels    | Bushels  | Bushels |
| Moccasin.....                   | 20.57      | 18.04      | 20.24      | 19.42      | 20.44      | 19.73      | 19.03      | 19.08               | 17.38      | 14.84            | 15.16      | 203.73   | 18.52   |
| Belle Fourche.....              | 18.42      | 18.97      | 17.88      | 17.90      | 15.05      | 16.90      | 16.62      | 16.24               | 17.32      | 15.28            | 15.72      | 186.30   | 16.94   |
| Sheridan.....                   | 16.57      | 20.02      | 17.08      | 19.73      | 16.49      | 16.72      | 16.89      | 14.81               | 15.86      | 13.99            | 17.60      | 185.76   | 16.87   |
| Mandan.....                     | 17.25      | 17.16      | 17.28      | 17.98      | 18.40      | 18.11      | 15.93      | 15.78               | 15.82      | 15.69            | 13.84      | 183.24   | 16.66   |
| Dickinson.....                  | 16.97      | 17.03      | 18.56      | 16.14      | 19.52      | 15.62      | 16.42      | 13.93               | 15.32      | 13.82            | 15.08      | 178.41   | 16.22   |
| Williston.....                  | 21.11      | 17.25      | 16.52      | 13.48      | 17.31      | 18.81      | 14.88      | 15.25               | 14.40      | 15.54            | 12.24      | 176.79   | 16.07   |
| Edgeley.....                    | 16.88      | 17.17      | 17.43      | 17.20      | 17.18      | 16.39      | 17.20      | 13.87               | 12.90      | 11.02            | 13.88      | 171.12   | 15.56   |
| Ardmore.....                    | 17.02      | 17.39      | 17.02      | 15.40      | 15.60      | 14.73      | 14.77      | 13.73               | 12.28      | 11.77            | 13.84      | 163.55   | 14.87   |
| Huntley.....                    | 15.23      | 14.82      | 15.16      | 13.87      | 14.67      | 13.65      | 13.87      | 12.09               | 15.18      | 12.75            | 15.24      | 156.46   | 14.22   |
| North Platte.....               | 14.66      | 14.86      | 16.01      | 14.68      | 12.85      | 13.92      | 15.46      | 14.13               | 13.36      | 13.03            | 11.50      | 154.46   | 14.04   |
| Scotts Bluff.....               | 12.78      | 12.02      | 13.51      | 13.07      | 13.83      | 13.51      | 12.52      | 9.79                | 9.24       | 10.24            | 10.72      | 131.23   | 11.93   |
| Akron.....                      | 11.00      | 12.20      | 11.78      | 12.94      | 11.40      | 10.36      | 10.46      | 10.89               | 8.18       | 10.08            | 8.34       | 117.63   | 10.69   |
| Assiniboine.....                | 11.73      | 11.81      | 10.02      | 12.39      | 11.35      | 10.67      | 10.04      | 9.84                | 8.38       | 11.17            | 8.72       | 116.09   | 10.55   |
| Hays.....                       | 11.18      | 13.06      | 11.39      | 10.94      | 9.58       | 10.19      | 10.50      | 9.50                | 8.78       | 9.28             | 8.36       | 112.82   | 10.26   |
| Colby.....                      | 10.85      | 10.97      | 10.61      | 11.62      | 12.12      | 9.17       | 9.41       | 9.96                | 8.50       | 10.55            | 7.82       | 111.58   | 10.14   |
| Archer.....                     | 11.69      | 10.02      | 11.64      | 12.56      | 12.12      | 10.55      | 8.56       | 9.55                | 7.40       | 8.07             | 8.36       | 110.52   | 10.05   |
| Total.....                      | 243.66     | 242.77     | 242.16     | 239.32     | 237.91     | 229.03     | 222.56     | 208.44              | 200.30     | 197.12           | 196.42     | 2,459.69 |         |
| Average.....                    | 15.24      | 15.17      | 15.14      | 14.96      | 14.87      | 14.31      | 13.91      | 13.03               | 12.52      | 12.32            | 12.28      |          | 13.98   |
| Mean rank for all stations..... | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8                   | 9          | 10               | 11         |          |         |

Groups 1 and 2 are already segregated in Tables 19 and 20, and Group 3 is represented by rotations 5 and 8. These two rotations are exactly alike except that in rotation 5 wheat follows summer-fallow and the oat crop follows wheat, whereas in rotation 8 the oat crop follows summer-fallow and wheat follows oats. As shown in Table 20, they differed in average yields for all stations and years by only 0.24 bushel. The average yields of these two rotations have been used for Group 3, as shown in Tables 22 and 23.

Group 4 is represented by rotations 1, 4, and 6. These three rotations are identical except that in rotation 1 wheat is sown on disked corn stubble and the oat crop follows wheat, in rotation 4 the oat crop is sown on disked corn stubble and wheat follows oats, and in rotation 6 barley is sown on disked corn stubble and the oat crop follows barley. As shown by Tables 19 and 20, rotations 1 and 4 differed in average yield by only 0.10 bushel, and rotation 6 yielded only 0.03 bushel more than rotation 1 and 0.07 bushel less than rotation 4. The average yields of these three rotations have been used for Group 4, as shown in Tables 22 and 23.

Group 5 is represented by rotations 2, 3, 7, and 9. These four rotations are identical except that wheat followed corn in rotations 2 and 3, barley followed oats in rotation 7, and wheat followed oats in rotation 9. Rotations 2, 7, and 9 were spring plowed, but rotation 3 was fall plowed. As shown by Tables 19 and 20, rotation 2 yielded 0.09 bushel less than rotation 7, rotation 9 yielded 0.56 bushel less than rotation 2, and rotation 3 yielded 0.40 bushel less than rotation 9. The average yields of these four rotations have been used for Group 5, as shown in Tables 22 and 23.

A careful study of Tables 19, 20, and 21 and of Figures 68 and 69, indicates that the somewhat erratic

differences in yields shown therein must be due to the fact that the corn crop reacts very differently from the wheat, oats, and barley crops, in response to differences in soil, climate, tillage, and crop sequence.

It was therefore decided to reject the corn yields and use only the yields from spring wheat, oats, and barley in considering the relative efficiency of these five groups. Further reasons for rejecting the corn yields will be presented in connection with the description of Tables 25 and 26 and Figure 71, which follows on page 12.

#### RESULTS SHOWN BY REJECTING CORN YIELDS

Table 21 has been prepared in the same form as Table 20, but the figures are different, owing to the rejection of the corn yields. The general effect has been to reduce the values, indicating that the assumed relative value of the corn yields, as 200 pounds dry weight of total crop, including grain and stover, was too low. For the particular combination of conditions existing at these 16 stations, for these 228 crop years, with the relative frequency of occurrence of the corn crop in the rotations, the ratio should have been 257 pounds of dry weight of the corn crop, instead of 200. Neither of these figures has any permanent value as a conversion factor in reducing corn yields to equivalents of bushels of wheat, as will be shown later.

There were 27 instances out of 176 where the values were increased, 32 where they remained the same (in rotations 5 and 8 where the corn crop did not enter into the rotation), and 117 where they were reduced. The net result was to reduce the grand average from 13.98 to 13.08, a reduction of 0.90 bushel of wheat equivalents, as is seen in the lower right-hand corner of Tables 20 and 21, respectively.



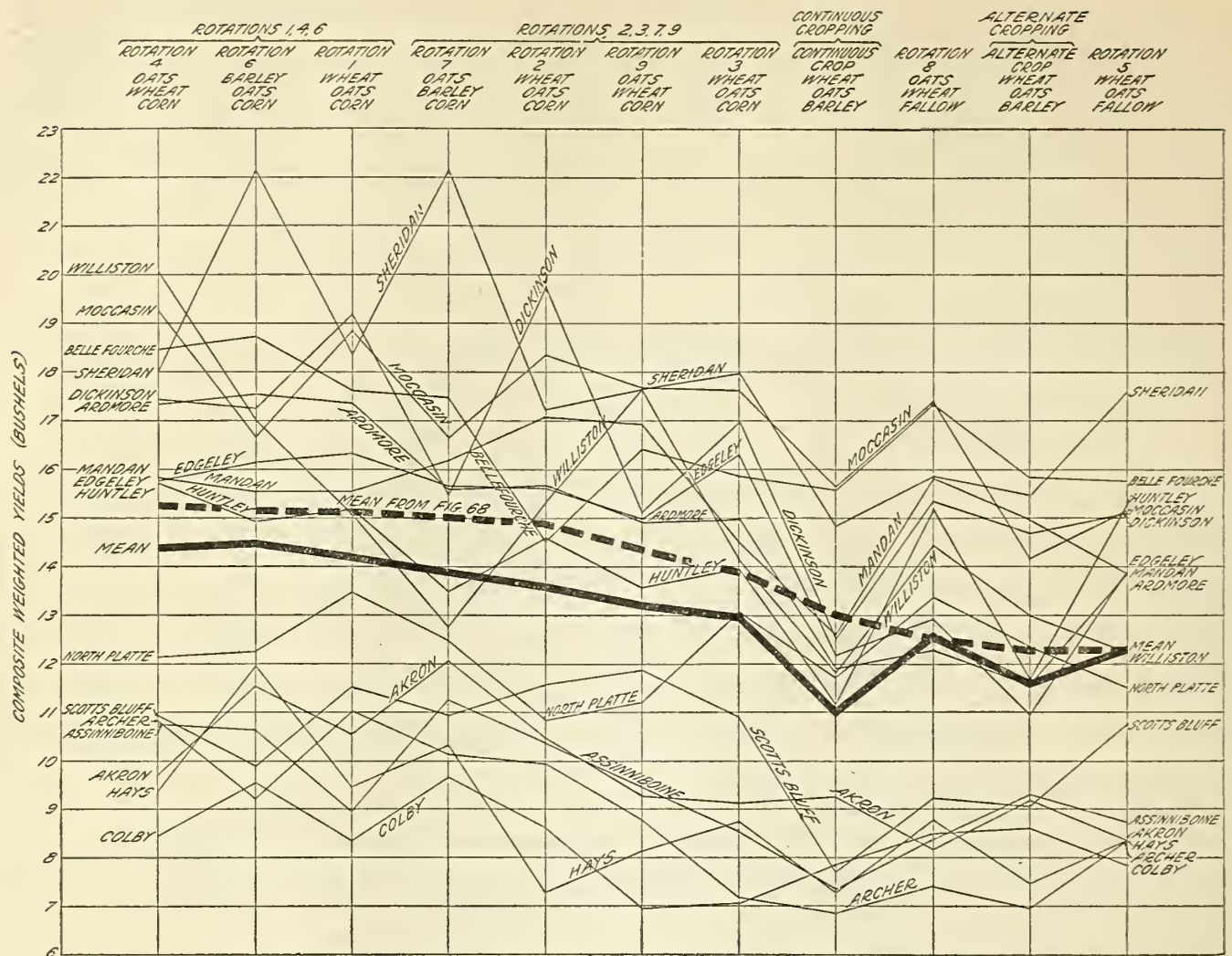


FIGURE 60.—Diagram illustrating Table 21 showing rotation groupings used in Tables 22 and 23. See text under "Group comparisons of crop yields"

TABLE 21.—Composite acre yields of spring wheat, oats, and barley at 16 field stations in the northern Great Plains area expressed in equivalent yields of bushels of wheat

[Arranged in the same order as in Table 20 and comparable therewith, but with corn yields excluded]

| Field station      | Rotation<br>4 | Rotation<br>6 | Rotation<br>1 | Rotation<br>7 | Rotation<br>2 | Rotation<br>9 | Rotation<br>3 | Continu-<br>ous crop-<br>ping | Rotation<br>8 | Alternate<br>fallow | Rotation<br>5 | Total    | Average |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------------------|---------------|---------------------|---------------|----------|---------|
|                    | Bushels       | Bushels       | Bushels       | Bushels       | Bushels       | Bushels       | Bushels       | Bushels                       | Bushels       | Bushels             | Bushels       | Bushels  | Bushels |
| Moccasin.....      | 19.27         | 16.68         | 18.84         | 16.65         | 18.33         | 17.68         | 17.60         | 15.63                         | 17.38         | 14.15               | 15.16         | 187.37   | 17.03   |
| Belle Fourche..... | 18.48         | 18.72         | 17.60         | 17.49         | 14.50         | 16.40         | 15.85         | 15.58                         | 17.32         | 15.82               | 15.72         | 183.48   | 16.68   |
| Sheridan.....      | 18.01         | 22.11         | 18.37         | 22.14         | 17.25         | 17.63         | 17.95         | 14.80                         | 15.86         | 15.47               | 17.60         | 197.19   | 17.93   |
| Mandan.....        | 15.81         | 15.53         | 15.53         | 16.19         | 17.08         | 16.90         | 14.48         | 12.60                         | 15.82         | 14.95               | 13.84         | 168.73   | 15.34   |
| Dickinson.....     | 17.44         | 17.24         | 19.20         | 15.49         | 19.70         | 15.10         | 16.93         | 12.50                         | 15.32         | 14.67               | 15.08         | 178.67   | 16.21   |
| Williston.....     | 20.05         | 17.01         | 15.07         | 12.73         | 15.30         | 17.63         | 14.13         | 11.80                         | 14.40         | 12.97               | 12.24         | 163.34   | 14.85   |
| Edgeley.....       | 15.79         | 16.14         | 16.34         | 15.64         | 15.63         | 14.98         | 16.30         | 12.15                         | 12.90         | 10.92               | 13.88         | 160.64   | 14.60   |
| Ardmore.....       | 17.34         | 17.53         | 17.34         | 15.58         | 15.65         | 14.90         | 14.95         | 11.88                         | 12.28         | 11.59               | 13.84         | 162.88   | 14.81   |
| Huntley.....       | 15.74         | 14.93         | 15.17         | 13.48         | 14.58         | 13.55         | 13.95         | 11.15                         | 15.18         | 11.67               | 15.24         | 154.64   | 14.06   |
| North Platte.....  | 12.14         | 12.22         | 13.46         | 12.49         | 10.83         | 11.20         | 13.05         | 11.70                         | 13.36         | 12.33               | 11.50         | 134.28   | 12.21   |
| Scotts Bluff.....  | 10.93         | 9.90          | 11.52         | 10.92         | 11.58         | 11.85         | 10.88         | 7.70                          | 9.24          | 9.05                | 10.72         | 114.29   | 10.39   |
| Akron.....         | 9.71          | 11.54         | 10.54         | 12.06         | 10.48         | 9.28          | 9.13          | 9.25                          | 8.18          | 9.19                | 8.34          | 107.70   | 9.79    |
| Assiniboine.....   | 10.78         | 10.61         | 8.99          | 11.27         | 10.38         | 9.48          | 8.53          | 7.35                          | 8.38          | 9.30                | 8.72          | 103.79   | 9.44    |
| Hays.....          | 9.38          | 11.95         | 9.49          | 10.32         | 7.30          | 8.13          | 8.75          | 7.30                          | 8.78          | 7.49                | 8.36          | 97.25    | 8.84    |
| Colby.....         | 8.45          | 9.56          | 8.37          | 9.69          | 8.63          | 6.98          | 7.03          | 7.85                          | 8.50          | 8.60                | 7.82          | 91.48    | 8.32    |
| Archer.....        | 10.80         | 9.21          | 11.01         | 10.13         | 9.95          | 8.80          | 7.18          | 6.85                          | 7.40          | 6.97                | 8.36          | 96.66    | 8.79    |
| Total.....         | 230.12        | 230.88        | 226.81        | 222.27        | 217.17        | 210.49        | 206.69        | 176.09                        | 200.30        | 185.14              | 196.42        | 2,302.38 |         |
| Average.....       | 14.38         | 14.43         | 14.18         | 13.89         | 13.57         | 13.16         | 12.92         | 11.00                         | 12.52         | 11.57               | 12.28         |          | 13.08   |



## GROUP COMPARISONS OF CROP YIELDS

Figure 69 represents graphically the data in Table 21. The different systems of cropping are shown at the top of the figure, indicating the crops and their sequences, continuous cropping, alternate fallowing, the numbers of the rotations 1 to 9, and their proposed groupings into five groups as heretofore explained.

It will be noted that there are two lines marked "mean." The heavy solid line is the mean of the data used in Table 21 and the broken line is the mean of the data used in Table 20 and Figure 68. The interval between these two means represents the average difference of 0.90 bushel heretofore referred to. It will be seen that these two means coincide in rotations 5 and 8 and show an extreme deviation in continuous cropping.

An intensive study of Figures 68 and 69 would reveal many other seemingly anomalous phenomena. In some instances they can be explained by local soil conditions which limit the storage of soil moisture by reason of an impervious subsoil, such as is found at Moccasin, Edgeley, and to a somewhat less extent at Belle Fourche. At these stations but little response is usually shown to summer-fallow. There are, however, many instances where it is impossible with our present knowledge to account for the peculiar behavior of crops. Reference will again be made to these problems after presenting some other important phases of the subject.

TABLE 22.—Reduction of the composite acre yields of wheat, oats, and barley at 16 field stations in the northern Great Plains area into five groups of rotations

[The average acre yields for each group are expressed in equivalent yields of bushels of wheat based on the data given in Table 21. The yields from continuous cropping and alternate fallow are the same as in Table 21]

| Field station | Con-<br>tinuous<br>cropping<br>(Group 1) | Alternate<br>fallow<br>(Group 2) | Rotations                 |                                    |   | Average                                     |
|---------------|--|----------------------------------|---------------------------|------------------------------------|---|---|
|               |  |                                  | 5 and 8<br>(Group 3)      | 1, 4, and 6<br>(Group 4)           | 2, 3, 7,<br>and 9<br>(Group 5)              |   |
| 1             | 2  | 3                                | 4                         | 5                                  | 6   | 7   |
| Moccasin      | Bushels<br>15.63                         | Bushels<br>14.15                 | Bushels<br>15.16<br>17.38 | Bushels<br>18.84<br>19.27<br>16.68 | Bushels<br>18.33<br>17.60<br>16.65<br>17.68 | Bushels<br>-----<br>-----<br>-----<br>----- |
| Average       | 15.63                                    | 14.15                            | 16.27                     | 18.26                              | 17.57                                       | 16.38                                       |
| Belle Fourche | 15.58                                    | 15.82                            | 15.72<br>17.32            | 17.60<br>18.48<br>18.72            | 14.50<br>15.85<br>17.49<br>16.40            | -----<br>-----<br>-----<br>-----            |
| Average       | 15.58                                    | 15.82                            | 16.52                     | 18.27                              | 16.06                                       | 16.45                                       |
| Sheridan      | 14.80                                    | 15.47                            | 17.60<br>15.86            | 18.37<br>18.01<br>22.11            | 17.25<br>17.95<br>22.14<br>17.63            | -----<br>-----<br>-----<br>-----            |
| Average       | 14.80                                    | 15.47                            | 16.73                     | 19.50                              | 18.74                                       | 17.05                                       |
| Mandan        | 12.60                                    | 14.95                            | 13.84<br>15.82            | 15.53<br>15.81<br>15.53            | 17.08<br>14.48<br>16.19<br>16.90            | -----<br>-----<br>-----<br>-----            |
| Average       | 12.60                                    | 14.95                            | 14.83                     | 15.62                              | 16.16                                       | 14.83                                       |
| Dickinson     | 12.50                                    | 14.67                            | 15.08<br>15.32            | 19.20<br>17.44<br>17.24            | 19.70<br>16.93<br>15.49<br>15.10            | -----<br>-----<br>-----<br>-----            |
| Average       | 12.50                                    | 14.67                            | 15.20                     | 17.96                              | 16.81                                       | 15.43                                       |
| Williston     | 11.80                                    | 12.97                            | 12.24<br>14.40            | 15.07<br>20.05<br>17.01            | 15.30<br>14.13<br>12.73<br>17.63            | -----<br>-----<br>-----<br>-----            |
| Average       | 11.80                                    | 12.97                            | 13.32                     | 17.38                              | 14.95                                       | 14.08                                       |

TABLE 22.—Reduction of the composite acre yields of wheat, oats, and barley at 16 field stations in the northern Great Plains area into five groups of rotations—Continued

| Field station | Con-<br>tinuous<br>cropping<br>(Group 1) | Alternate<br>fallow<br>(Group 2) | Rotations                 |                                    |   | Average                                     |
|---------------|--|----------------------------------|---------------------------|------------------------------------|---|---|
|               |  |                                  | 5 and 8<br>(Group 3)      | 1, 4, and 6<br>(Group 4)           | 2, 3, 7,<br>and 9<br>(Group 5)              |   |
| 1             | 2  | 3                                | 4                         | 5                                  | 6   | 7   |
| Edgeley       | Bushels<br>12.15                         | Bushels<br>10.92                 | Bushels<br>13.88<br>12.90 | Bushels<br>16.31<br>15.79<br>16.14 | Bushels<br>15.63<br>16.30<br>15.64<br>14.98 | Bushels<br>-----<br>-----<br>-----<br>----- |
| Average       | 12.15                                    | 10.92                            | 13.39                     | 16.08                              | 15.64                                       | 13.64                                       |
| Ardmore       | 11.88                                    | 11.59                            | 13.84<br>12.28            | 17.34<br>17.34<br>17.53            | 15.65<br>14.95<br>15.58<br>14.90            | -----<br>-----<br>-----<br>-----            |
| Average       | 11.88                                    | 11.59                            | 13.06                     | 17.40                              | 15.27                                       | 13.84                                       |
| Huntley       | 11.15                                    | 11.67                            | 15.24<br>15.18            | 15.17<br>15.74<br>14.93            | 14.58<br>13.95<br>13.48<br>13.55            | -----<br>-----<br>-----<br>-----            |
| Average       | 11.15                                    | 11.67                            | 15.21                     | 15.28                              | 13.89                                       | 13.44                                       |
| North Platte  | 11.70                                    | 12.33                            | 11.50<br>13.36            | 13.46<br>12.14<br>12.22            | 10.83<br>13.05<br>12.49<br>11.20            | -----<br>-----<br>-----<br>-----            |
| Average       | 11.70                                    | 12.33                            | 12.43                     | 12.61                              | 11.89                                       | 12.19                                       |
| Scotts Bluff  | 7.70                                     | 9.05                             | 10.72<br>9.24             | 11.52<br>10.93<br>9.90             | 11.58<br>10.88<br>10.92<br>11.85            | -----<br>-----<br>-----<br>-----            |
| Average       | 7.70                                     | 9.05                             | 9.98                      | 10.78                              | 11.31                                       | 9.76  |
| Akron         | 9.25                                     | 9.19                             | 8.34<br>8.18              | 10.54<br>9.71<br>11.54             | 10.48<br>9.13<br>12.06<br>9.28              | -----<br>-----<br>-----<br>-----            |
| Average       | 9.25                                     | 9.19                             | 8.26                      | 10.60                              | 10.24                                       | 9.51  |
| Assiniboine   | 7.35                                     | 9.30                             | 8.72<br>8.38              | 8.99<br>10.78<br>10.61             | 10.38<br>8.53<br>11.27<br>9.48              | -----<br>-----<br>-----<br>-----            |
| Average       | 7.35                                     | 9.30                             | 8.55                      | 10.13                              | 9.92  | 9.05  |
| Hays          | 7.30                                     | 7.49                             | 8.36<br>8.78              | 9.49<br>9.38<br>11.95              | 7.30<br>8.75<br>10.32<br>8.13               | -----<br>-----<br>-----<br>-----            |
| Average       | 7.30                                     | 7.49                             | 8.57                      | 10.27                              | 8.63  | 8.45  |
| Colby         | 7.85                                     | 8.60                             | 7.82<br>8.50              | 8.37<br>8.45<br>9.56               | 8.63<br>7.03<br>9.69<br>6.98                | -----<br>-----<br>-----<br>-----            |
| Average       | 7.85                                     | 8.60                             | 8.16                      | 8.79                               | 8.08  | 8.30  |
| Archer        | 6.85                                     | 6.97                             | 8.36<br>7.40              | 11.01<br>10.80<br>9.21             | 9.95<br>7.18<br>10.13<br>8.80               | -----<br>-----<br>-----<br>-----            |
| Average       | 6.85                                     | 6.97                             | 7.88                      | 10.34                              | 9.02  | 8.21  |
| Grand average | 11.01                                    | 11.57                            | 12.40                     | 14.33                              | 13.39                                       | 12.54                                       |

Attention heretofore has been called to the very close agreement between the average yields of the several rotations that have been grouped together. It must, however, be constantly borne in mind that these averages almost invariably represent very wide divergences in the individual yields at the different stations from which these averages were obtained, as shown by Figures 68 and 69. Keeping these facts in mind, it is found that in order to arrive at any concrete generalization concerning the relative efficiency of the different systems of tillage and crop rotations, it will be



FIGURE 70.—Diagram illustrating the relative efficiency of five tillage and rotation systems by the percentages of the means for each of the five groups at 16 northern Great Plains field stations, arranged in pairs of high and low yielding stations. Percentages below the mean (100) are shown along the left margin and those above the mean along the right margin

necessary still further to concentrate the available data. The manner of reduction of the 11 different rotations and tillage methods to five groups is indicated in Figures 69 and 70.

#### SIMPLIFYING GROUP COMPARISONS OF CROP YIELDS BY CONCENTRATION INTO FEWER GROUPS

The figures in Table 22 are transferred from Table 21. Columns 2 and 3 contain the same figures as the columns with the same headings in Table 21. Column 4, headed "Rotations 5 and 8," contains the same figures as the respective columns in Table 21, but the average of these two quantities is used, and the footing at the bottom is the average of the two footings in Tables 20 and 21, respectively. Columns 5 and 6, headed "Rotations 1, 4, and 6" and "Rotations 2, 3, 7, and 9," are treated in the same manner as column 4. The average of the footings at the bottom of columns 2-6 and the average of the averages in column 7 give the grand average of 12.54, which is 0.54 less than 13.08, as given in Table 21. This difference is due to the averaging of the averages of 11 groups when concentrated into five groups.

#### PERCENTAGE VALUES OF CROP-YIELD COMPARISONS

The average yields for the several stations as they appear in column 7 of Table 22 are now transferred to column 2 in Table 23, and in the same line with these mean yields in columns 3, 5, 7, 9, and 11 are placed the respective yields for each of the five groups, as given in Table 22.

Each of these yields is then divided by the mean yields for that station and the respective quotients placed in columns 4, 6, 8, 10, and 12 under the heading "Percentage of mean." These figures constitute the percentages of the mean for all the five tillage systems at each station, and their relative magnitudes indicate the relative efficiency of each tillage system for each station. The percentage value of any given system at any station may be compared with the percentage value of any other system at any station irrespective of the actual yields at any of the stations.

In order to determine whether the relative magnitude of the yields exerted any influence upon the relationships of different tillage methods and crop rotations as measured by the respective percentage of their mean yields, Table 23 is presented in two sections. The upper section contains the figures for the eight stations having the highest yields, and the lower section contains those having the lowest yields. The averages are given for each station and the grand averages for the entire table. The percentages of the means are the significant figures in this table, as they are the indexes of the relative efficiency of the different systems or rotations. These are presented graphically in Figure 70.



TABLE 23.—Composite weighted acre yields of wheat, oats, and barley, expressed in equivalent yields of bushels of wheat, at 16 field stations in the northern Great Plains area, showing percentage of mean

[The stations are arranged in the same order as in Tables 20, 21, and 22, but they are separated into two divisions, the upper containing the higher yields and the lower containing the lesser yields]

| Stations—               | Mean yields for all rotations | Group 1, continuous cropping |                    | Group 2, alternate fallow |                    | Group 3, rotation 5 and 8 (fallow) |                    | Group 4, rotations 1, 4, and 6 (disked corn stubble) |                    | Group 5, rotations 2, 3, 7, and 9 (plowed corn stubble) |                    |
|-------------------------|-------------------------------|------------------------------|--------------------|---------------------------|--------------------|------------------------------------|--------------------|--|--------------------|---|--------------------|
|                         |                               | Average yield                | Percentage of mean | Average yield             | Percentage of mean | Average yield                      | Percentage of mean | Average yield  | Percentage of mean | Average yield   | Percentage of mean |
| 1                       | 2                             | 3                            | 4                  | 5                         | 6                  | 7                                  | 8                  | 9  | 10                 | 11  | 12                 |
| Showing high yields:    | Bu.                           | Bu.                          |                    | Bu.                       |                    | Bu.                                |                    | Bu.  |                    | Bu.   |                    |
| Moccasin.....           | 16.38                         | 15.63                        | 0.95               | 14.15                     | 0.86               | 16.27                              | 0.99               | 18.26  | 1.11               | 17.57   | 1.07               |
| Belle Fourche.....      | 16.45                         | 15.58                        | .95                | 15.82                     | .96                | 16.52                              | 1.00               | 18.27  | 1.11               | 16.06   | .98                |
| Sheridan.....           | 17.05                         | 14.80                        | .87                | 15.47                     | .91                | 16.73                              | .98                | 19.50  | 1.14               | 18.74   | 1.10               |
| Mandan.....             | 14.83                         | 12.60                        | .85                | 14.95                     | 1.01               | 14.83                              | 1.00               | 15.62  | 1.05               | 16.16   | 1.09               |
| Dickinson.....          | 15.43                         | 12.50                        | .81                | 14.67                     | .95                | 15.20                              | .99                | 17.96  | 1.16               | 16.81   | 1.09               |
| Williston.....          | 14.08                         | 11.80                        | .84                | 12.97                     | .92                | 13.32                              | .95                | 17.38  | 1.23               | 14.95   | 1.06               |
| Edgeley.....            | 13.64                         | 12.15                        | .89                | 10.92                     | .80                | 13.39                              | .98                | 16.08  | 1.18               | 15.64   | 1.15               |
| Ardmore.....            | 13.84                         | 11.88                        | .86                | 11.59                     | .84                | 13.06                              | .94                | 17.40  | 1.26               | 15.27   | 1.10               |
| Average.....            | 15.22                         | 13.37                        |                    | 13.82                     |                    | 14.92                              |                    | 17.56  |                    | 16.40   |                    |
| Percentage of mean..... |                               |                              | .88                |                           | .91                |                                    | .98                |  | 1.16               |   | 1.08               |
| Showing low yields:     |                               |                              |                    |                           |                    |                                    |                    |  |                    |   |                    |
| Huntley.....            | 13.44                         | 11.15                        | .83                | 11.67                     | .87                | 15.21                              | 1.13               | 15.28  | 1.14               | 13.89   | 1.03               |
| North Platte.....       | 12.19                         | 11.70                        | .96                | 12.33                     | 1.01               | 12.43                              | 1.02               | 12.61  | 1.03               | 11.89   | .98                |
| Scotts Bluff.....       | 9.76                          | 7.70                         | .79                | 9.05                      | .93                | 9.98                               | 1.02               | 10.78  | 1.10               | 11.31   | 1.16               |
| Akron.....              | 9.51                          | 9.25                         | .97                | 9.19                      | .97                | 8.26                               | .87                | 10.60  | 1.12               | 10.24   | 1.08               |
| Assiniboine.....        | 9.05                          | 7.35                         | .81                | 9.30                      | 1.03               | 8.55                               | .94                | 10.13  | 1.12               | 9.92  | 1.10               |
| Hays.....               | 8.45                          | 7.30                         | .86                | 7.49                      | .89                | 8.57                               | 1.01               | 10.27  | 1.22               | 8.63  | 1.02               |
| Colby.....              | 8.30                          | 7.85                         | .95                | 8.60                      | 1.04               | 8.16                               | .98                | 8.79   | 1.06               | 8.08  | .97                |
| Archer.....             | 8.21                          | 6.85                         | .83                | 6.97                      | .85                | 7.88                               | .96                | 10.34  | 1.26               | 9.02  | 1.10               |
| Average.....            | 9.87                          | 8.64                         |                    | 9.33                      |                    | 9.88                               |                    | 11.10  |                    | 10.37   |                    |
| Percentage of mean..... |                               |                              | .88                |                           | .95                |                                    | .99                |  | 1.13               |   | 1.06               |
| Grand average:          |                               |                              |                    |                           |                    |                                    |                    |  |                    |   |                    |
| Yield.....              | 12.54                         | 11.01                        |                    | 11.57                     |                    | 12.40                              |                    | 14.33  |                    | 13.39   |                    |
| Percentage of mean..... |                               |                              | .88                |                           | .93                |                                    | .985               |  | 1.145              |   | 1.07               |

#### RELATIVE EFFECTIVENESS OF ROTATIONS OR TILLAGE METHODS AT HIGH-YIELDING AND LOW-YIELDING STATIONS

In order to make direct comparisons between those stations that would be likely to show the greatest differences, the stations have been plotted in pairs, as shown in Figure 70, the station at the top of the upper section of high yields, with that from the bottom of the lower section of low yields; the second one from the top of the upper section with the second one from the bottom of the lower section, and so on for the eight pairs. The differences in yields between the two members of the pair, expressed in the equivalents of bushels of wheat, are graphically shown in connection with the station designations at the left of the figure. The submeans for each section of Table 23 and for the entire table are shown graphically at the bottom of the figure. The latter is repeated in broken lines for each pair for more direct comparison. The figures at the bottom are the footings of Table 23, showing, respectively, the percentages and the yields for the entire table.

It is an interesting fact, but probably of little practical importance, that the four pairs having the

greater differences in yields between their two members show a decidedly closer coincidence in percentages than do the four pairs having the lesser differences. It is also a rather peculiar circumstance that the Sheridan-Hays pair having the closest coincidence also have the greatest difference in yields, and the Edgeley-North Platte pair, which show the greatest discordance in percentages, differ in yields by only 1.45 bushels.

The important facts established by Figure 70 are that it furnishes no evidence that the relative effectiveness of rotations or tillage methods is influenced in any way by the differences in magnitude of the crop yields obtained at different stations and that if any such influences existed these comparisons would have revealed them. It, therefore, may be safely stated that this percentage method provides an index to the relative effectiveness as reliable as the data upon which it is based.

It must be borne in mind that the conclusions indicated in Table 23 and Figure 70 are based upon the yields from 228 crop years involving more than 5,000 determinations of individual crop yields of spring wheat, oats, and barley at 16 field stations for an average period of 14¼ years, ranging from 9 to 19 years at each station. This is a broad basis for a broad generalization. Very few broad generalizations are universally applicable. This one is no exception to the rule. It is, however, based upon long-continued and carefully interpreted experimentation and is believed to be the safest general guide to rotation practices throughout the northern Great Plains that has ever been formulated, for the very obvious reason that it is based upon vastly more reliable experimental data than have ever before been brought together. A careful study of Table 21 and Figure 69, and of the still more detailed information contained in tables which follow will be of great assistance to anyone desiring to solve local problems of crop rotation and tillage methods, which can be solved only in terms of particular farms and particular farmers, being subject also to the local soil, climatic, and economic conditions existing and prospective at any given time and place.

#### RELATIONS OF THE CORN CROP TO ROTATIONS IN THE NORTHERN GREAT PLAINS AREA

Corn (also known as Indian corn, or maize) is, and probably long will continue to be, one of the most important crops in the farming systems and crop rotations in the Great Plains area. The importance of the corn crop is not due to its intrinsic value as a cash crop, but rather to the beneficial influence that it has upon the small-grain crops which follow it in the rotations, and it is also one of the most dependable crops grown in this region to provide winter feed for livestock. In favorable years it often produces profitable yields of grain at many of the stations, and it seldom fails to produce more or less stover or silage in even the most unfavorable years. The altitude is too high, the season too short, and the annual rainfall too low for corn ever to become the major crop, except possibly in some few especially favored localities in the



Great Plains area. Nevertheless, it is believed, not only from evidence furnished by these investigations, but also from nearly a half century of experience and observation in the northern Great Plains, that the growing of corn and the raising of livestock should occupy a prominent place in the farming systems of that region. Such being the case, the growing of corn should be given careful consideration in any study of crop rotations on the northern Great Plains, and it seems that the corn yields should be included in estimates of the relative efficiency of all rotations in which it is used. But, as heretofore mentioned, there seem to be serious difficulties in establishing a common basis for estimating its relative value in any given rotation. This is due largely to the fact that in many instances the climatic conditions, and sometimes the tillage methods, which are most favorable to spring wheat, oats, and barley are unfavorable for the corn crop, and vice versa.

There is still another reason why "a good wheat season is a poor corn season, and a good corn season a poor wheat season." Not infrequently the small-grain crops will be seriously damaged or completely destroyed by unfavorable weather such as drought or hail during May or June. This may be followed by favorable weather during July, August, and September, and a good corn crop may be harvested. But the most discordant thing about the corn crop is that it does not respond to summer-fallowing to anywhere near the extent that wheat, oats, and barley do. In fact, continuous cropping to corn not infrequently yields higher than alternate fallowing; and it is the rule rather than the exception that the yields from corn grown continuously on the same land are higher than when grown in rotations with small-grain crops.

In order to present still more impressively the very erratic behavior of the corn crop, Tables 24, 25, and 26 have been developed from Table 19 in the same manner and the same general form as Table 23. All values in these tables are expressed in equivalents of bushels of wheat per acre.

Table 24 includes with wheat, oats, and barley the corn yields obtained by dividing the total dry weight of corn grain and stover by 200, as in Tables 19 and 20. It also includes rotations 5 and 8, as does Table 23.

Table 25 includes corn, calculated at 200 pounds as the equivalent of 1 bushel of wheat, but excludes wheat, oats, and barley. It also excludes rotations 5 and 8.

Table 26 is identical with Table 25 except that the corn yields are calculated upon the basis of 257 pounds of dry weight of corn grain and stover as being equivalent to 1 bushel of wheat, instead of 200 pounds as in Tables 19 and 20.

TABLE 24.—Composite weighted acre yields of wheat, oats, barley, and corn, expressed in equivalent yields of bushels of wheat, at 16 field stations in the northern Great Plains area, showing percentage of mean

[Same as Table 23, except that corn yields (obtained by dividing the total dry weight of corn and stover by 200) have been included]

| Field stations—              | Mean<br>yields for all<br>rotations | Group 1,<br>contin-<br>uous<br>cropping |                       | Group 2,<br>alternate<br>fallow |                       | Group 3,<br>rotations<br>5 and 8<br>(fallow) |                       | Group 4,<br>rotations<br>1, 4, and<br>6 (disked<br>corn<br>stubble) |                       | Group 5,<br>rotations<br>2, 3, 7,<br>and 9<br>(plowed<br>corn<br>stubble) |                       |      |
|------------------------------|-------------------------------------|---|-----------------------|---------------------------------|-----------------------|--|-----------------------|---|-----------------------|---|-----------------------|------|
|                              |                                     | Average<br>yield                        | Percentage<br>of mean | Average<br>yield                | Percentage<br>of mean | Average<br>yield                             | Percentage<br>of mean | Average<br>yield  | Percentage<br>of mean | Average<br>yield  | Percentage<br>of mean |      |
| 1                            | 2                                   | 3                                       | 4                     | 5                               | 6                     | 7  | 8                     | 9   | 10                    | 11  | 12                    |      |
| Showing high yields:         | <i>Bu.</i>                          | <i>Bu.</i>                              |                       | <i>Bu.</i>                      |                       | <i>Bu.</i>                                   |                       | <i>Bu.</i>  |                       | <i>Bu.</i>  |                       |      |
| Moccasin.....                | 17.88                               | 19.08                                   |                       | 1.07                            | 14.84                 | 0.83   | 16.27                 | 0.91  | 19.55                 | 1.09  | 19.66                 | 1.10 |
| Belle Fourche.....           | 16.62                               | 16.24                                   |                       | .98                             | 15.28                 | .92  | 16.52                 | .99   | 18.42                 | 1.11  | 16.62                 | 1.00 |
| Sheridan.....                | 16.18                               | 14.81                                   |                       | .92                             | 13.99                 | .86  | 16.73                 | 1.03  | 17.89                 | 1.11  | 17.48                 | 1.08 |
| Mandan.....                  | 16.27                               | 15.78                                   |                       | .97                             | 15.69                 | .96  | 14.83                 | .91   | 17.23                 | 1.06  | 17.61                 | 1.08 |
| Dickinson.....               | 15.48                               | 13.93                                   |                       | .90                             | 13.82                 | .89  | 15.20                 | .98   | 17.52                 | 1.13  | 16.92                 | 1.09 |
| Williston.....               | 15.70                               | 15.21                                   |                       | .97                             | 15.54                 | .99  | 13.32                 | .84   | 18.29                 | 1.17  | 16.12                 | 1.03 |
| Edgley.....                  | 14.49                               | 13.87                                   |                       | .95                             | 11.02                 | .76  | 13.39                 | .92   | 17.16                 | 1.18  | 16.99                 | 1.17 |
| Ardmore.....                 | 14.16                               | 13.73                                   |                       | .97                             | 11.77                 | .83  | 13.06                 | .92   | 17.14                 | 1.21  | 15.12                 | 1.07 |
| Average.....                 | 15.85                               | 15.33                                   |                       |                                 | 13.99                 |  | 14.92                 |   | 17.90                 |   | 17.07                 |      |
| Percentage of<br>mean.....   |                                     |   |                       | .97                             |                       | .88  |                       | .94   |                       | 1.13  |                       | 1.08 |
| Showing low yields:          |                                     |   |                       |                                 |                       |  |                       |   |                       |   |                       |      |
| Huntley.....                 | 13.82                               | 12.09                                   |                       | .87                             | 12.75                 | .92  | 15.21                 | 1.10  | 15.05                 | 1.09  | 14.01                 | 1.01 |
| North Platte.....            | 13.80                               | 14.13                                   |                       | 1.02                            | 13.03                 | .94  | 12.43                 | .90   | 15.18                 | 1.10  | 14.23                 | 1.03 |
| Scotts Bluff.....            | 11.20                               | 9.79                                    |                       | .87                             | 10.24                 | .91  | 9.98                  | .89   | 12.77                 | 1.14  | 13.23                 | 1.18 |
| Akron.....                   | 10.44                               | 10.89                                   |                       | 1.04                            | 10.08                 | .97  | 8.26                  | .79   | 11.66                 | 1.12  | 11.29                 | 1.08 |
| Assiniboine.....             | 10.37                               | 9.84                                    |                       | .95                             | 11.17                 | 1.08   | 8.55                  | .82   | 11.17                 | 1.08  | 11.11                 | 1.07 |
| Hays.....                    | 9.91                                | 9.50                                    |                       | .96                             | 9.28                  | .94  | 8.57                  | .86   | 11.90                 | 1.20  | 10.30                 | 1.04 |
| Colby.....                   | 10.01                               | 9.96                                    |                       | 1.00                            | 10.53                 | 1.05   | 8.16                  | .82   | 10.81                 | 1.08  | 10.58                 | 1.06 |
| Archer.....                  | 9.51                                | 9.55                                    |                       | 1.00                            | 8.07                  | .85  | 7.88                  | .82   | 11.12                 | 1.17  | 10.95                 | 1.15 |
| Average.....                 | 11.13                               | 10.72                                   |                       |                                 | 10.64                 |  | 9.88                  |   | 12.46                 |   | 11.96                 |      |
| Percentage of<br>mean.....   |                                     |   |                       | .96                             |                       | .96  |                       | .88   |                       | 1.12  |                       | 1.08 |
| Grand average:<br>Yield..... | 13.49                               | 13.03                                   |                       |                                 | 12.32                 |  | 12.40                 |   | 15.18                 |   | 14.51                 |      |
| Percentage<br>of mean.....   |                                     |   |                       | .96                             |                       | .92  |                       | .91   |                       | 1.13  |                       | 1.08 |

As has been mentioned before, the relative value assigned to corn in Tables 19 to 25 is too high as a broad generalization for the average conditions that have prevailed at the 16 northern Great Plains field stations during the 228 crop years covered by these investigations, as shown by the facts that the grand average of the mean composite acre yields of wheat, oats, and barley, as given in column 7 of Table 22 is 12.54 bushels; while for corn, wheat, oats, and barley, as given in Table 24, the average is 13.49 bushels; and in Table 25, where the yields of corn only are given, the mean acre yield is 16.11 bushels, using 200 pounds dry weight as the basis of computation. It was, therefore, considered desirable to compute the corn yields on the basis of 257 pounds dry weight as has been done in Table 26, which gives 12.54 bushels, the same as in Table 23.



TABLE 25.—*Acre yields of corn at 16 field stations in the northern Great Plains area, expressed in equivalent yields of bushels of wheat, as given in Table 19, and grouped in the same manner as the composite yields of wheat, oats, and barley in Table 23, showing also percentage of mean as in Table 23*

[The total dry weight of corn grain and stover is divided by 200 to convert it into equivalent bushels of wheat. Rotations 5 and 8 are omitted because they contain no corn]

| Field stations—      | Mean yields for all rotations | Group 1, continuous cropping |                    | Group 2, alternate fallow |                    | Group 4, rotations 1, 4, and 6 (disked corn stubble) |                    | Group 5, rotations 2, 3, 7, and 9 (plowed corn stubble) |                    |
|----------------------|-------------------------------|------------------------------|--------------------|---------------------------|--------------------|--|--------------------|---|--------------------|
|                      |                               | Average yield                | Percentage of mean | Average yield             | Percentage of mean | Average yield  | Percentage of mean | Average yield   | Percentage of mean |
| 1                    | 2                             | 3                            | 4                  | 5                         | 6                  | 7  | 8                  | 9   | 10                 |
| Showing high yields: | <i>Bu.</i>                    | <i>Bu.</i>                   |                    | <i>Bu.</i>                |                    | <i>Bu.</i>   |                    | <i>Bu.</i>  |                    |
| Moccasin             | 22.08                         | 25.99                        | 1.18               | 16.21                     | 0.73               | 22.28  | 1.01               | 23.84   | 1.08               |
| Belle Fourche        | 17.06                         | 17.57                        | 1.03               | 14.20                     | .83                | 18.71  | 1.10               | 17.74   | 1.04               |
| Sheridan             | 13.85                         | 14.83                        | 1.07               | 11.03                     | .80                | 14.63  | 1.06               | 14.89   | 1.08               |
| Mandan               | 20.05                         | 22.13                        | 1.10               | 17.17                     | .86                | 20.42  | 1.02               | 20.50   | 1.02               |
| Dickinson            | 15.67                         | 16.79                        | 1.07               | 12.11                     | .77                | 16.61  | 1.06               | 17.17   | 1.10               |
| Williston            | 20.35                         | 22.15                        | 1.09               | 20.69                     | 1.02               | 20.09  | .99                | 18.47   | .91                |
| Edgeley              | 16.88                         | 17.31                        | 1.03               | 11.22                     | .66                | 19.28  | 1.14               | 19.71   | 1.17               |
| Ardmore              | 15.26                         | 17.44                        | 1.14               | 12.15                     | .80                | 16.60  | 1.09               | 14.84   | .97                |
| Average yield        | 17.65                         | 19.28                        |                    | 14.35                     |                    | 18.58  |                    | 18.40   |                    |
| Percentage of mean   |                               |                              | 1.09               |                           | .81                |  | 1.05               |   | 1.04               |
| Showing low yields:  |                               |                              |                    |                           |                    |  |                    |   |                    |
| Huntley              | 14.44                         | 13.97                        | .97                | 14.92                     | 1.03               | 14.62  | 1.01               | 14.26   | .99                |
| North Platte         | 18.10                         | 18.78                        | 1.04               | 14.41                     | .80                | 20.29  | 1.12               | 18.91   | 1.04               |
| Scotts Bluff         | 15.10                         | 13.98                        | .93                | 12.62                     | .84                | 16.73  | 1.11               | 17.09   | 1.13               |
| Akron                | 13.30                         | 14.17                        | 1.07               | 11.87                     | .89                | 13.76  | 1.03               | 13.39   | 1.01               |
| Assiniboine          | 14.13                         | 14.82                        | 1.05               | 14.92                     | 1.06               | 13.26  | .94                | 13.52   | .96                |
| Hays                 | 13.87                         | 13.89                        | 1.00               | 12.88                     | .93                | 15.06  | 1.09               | 13.66   | .98                |
| Colby                | 14.75                         | 14.17                        | .96                | 14.45                     | .98                | 14.82  | 1.00               | 15.58   | 1.06               |
| Archer               | 12.82                         | 14.94                        | 1.17               | 10.28                     | .80                | 12.66  | .99                | 13.39   | 1.04               |
| Average yield        | 14.56                         | 14.84                        |                    | 13.29                     |                    | 15.15  |                    | 14.98   |                    |
| Percentage of mean   |                               |                              | 1.02               |                           | .91                |  | 1.04               |   | 1.03               |
| Grand average:       |                               |                              |                    |                           |                    |  |                    |   |                    |
| Yield                | 16.11                         | 17.06                        |                    | 13.82                     |                    | 16.86  |                    | 16.69   |                    |
| Percentage of mean   |                               |                              | 1.06               |                           | .86                |  | 1.05               |   | 1.04               |

In Figure 71 the acre yields of wheat, oats, and barley, as shown in Table 23, are also given in equivalents of bushels of wheat, the solid lines representing the wheat, oats, and barley yields, and the broken lines the corn yields, as given in Table 26. There are two mean lines showing the means by stations, one for corn only, and the other for wheat, oats, and barley. Although each of these means averages 12.54 bushels in wheat equivalents, it will be seen that they vary fantastically from each other for the individual stations, thus showing how discordant the small-grain yields are with the corn yields at the different stations. For example, at Sheridan the difference between continuous cropping for corn and for small grains is 3.26 bushels, whereas at Huntley this difference is only 0.28 bushel; for alternate fallow the respective differences are 6.89 and 0.06 bushels; for rotations 1, 4, and 6 these differences are 8.11 and 3.9 bushels; and for rotations 2, 3, 7, and 9 these differences are 7.15 and 2.89 bushels. There are many other instances where the discordance is nearly as great. In fact, discord rather than accord seems to be the rule, as is shown by the repeated crossing and recrossing of the two "mean" lines.

Figure 72, like Figure 71, is a graphic presentation of the figures given in Tables 23, 24, and 25. But in Figure 72 the percentage of mean is used instead of the acre yield as in Figure 71.

TABLE 26.—*Acre yields of corn, expressed in amended equivalent yields of bushels of wheat, at 16 field stations in the northern Great Plains area*

[This table is the same as Table 25, except that 257 (instead of 200) is used as the divisor of the total weight in the conversion of yields to wheat equivalents]

| Field stations—      | Mean yields for all rotations | Group 1, continuous cropping |                    | Group 2, alternate fallow |                    | Group 4, rotations 1, 4, and 6 (disked corn stubble) |                    | Group 5, rotations 2, 3, 7, and 9 (plowed corn stubble) |                    |
|----------------------|-------------------------------|------------------------------|--------------------|---------------------------|--------------------|--|--------------------|---|--------------------|
|                      |                               | Average yield                | Percentage of mean | Average yield             | Percentage of mean | Average yield  | Percentage of mean | Average yield   | Percentage of mean |
| 1                    | 2                             | 3                            | 4                  | 5                         | 6                  | 7  | 8                  | 9   | 10                 |
| Showing high yields: | <i>Bush.</i>                  | <i>Bush.</i>                 |                    | <i>Bush.</i>              |                    | <i>Bush.</i>   |                    | <i>Bush.</i>  |                    |
| Moccasin             | 17.18                         | 20.23                        | 1.18               | 12.62                     | 0.74               | 17.34  | 1.01               | 18.55   | 1.08               |
| Belle Fourche        | 13.27                         | 13.67                        | 1.03               | 11.05                     | .83                | 14.56  | 1.10               | 13.81   | 1.04               |
| Sheridan             | 10.78                         | 11.54                        | 1.07               | 8.58                      | .80                | 11.39  | 1.06               | 11.59   | 1.08               |
| Mandan               | 15.60                         | 17.22                        | 1.10               | 13.36                     | .86                | 15.89  | 1.02               | 15.95   | 1.02               |
| Dickinson            | 12.19                         | 13.07                        | 1.07               | 9.42                      | .77                | 12.93  | 1.06               | 13.36   | 1.10               |
| Williston            | 15.84                         | 17.24                        | 1.09               | 16.10                     | 1.02               | 15.63  | .99                | 14.37   | .91                |
| Edgeley              | 13.14                         | 13.47                        | 1.03               | 8.73                      | .65                | 15.00  | 1.14               | 15.34   | 1.17               |
| Ardmore              | 11.88                         | 13.57                        | 1.14               | 9.46                      | .80                | 12.92  | 1.09               | 11.55   | .97                |
| Average yield        | 13.74                         | 15.00                        |                    | 11.17                     |                    | 14.46  |                    | 14.32   |                    |
| Percentage of mean   |                               |                              | 1.09               |                           | .81                |  | 1.06               |   | 1.05               |
| Showing low yields:  |                               |                              |                    |                           |                    |  |                    |   |                    |
| Huntley              | 11.24                         | 10.87                        | .97                | 11.61                     | 1.03               | 11.38  | 1.01               | 11.10   | .99                |
| North Platte         | 14.08                         | 14.61                        | 1.04               | 11.21                     | .80                | 15.79  | 1.12               | 14.72   | 1.05               |
| Scotts Bluff         | 11.75                         | 10.88                        | .93                | 9.82                      | .84                | 13.02  | 1.11               | 13.30   | 1.13               |
| Akron                | 10.35                         | 11.03                        | 1.07               | 9.24                      | .89                | 10.71  | 1.03               | 10.42   | 1.01               |
| Assiniboine          | 11.00                         | 11.53                        | 1.05               | 11.61                     | 1.06               | 10.32  | .94                | 10.52   | .96                |
| Hays                 | 10.79                         | 10.81                        | 1.00               | 10.02                     | .93                | 11.72  | 1.09               | 10.63   | .99                |
| Colby                | 11.48                         | 11.03                        | .96                | 11.25                     | .98                | 11.53  | 1.00               | 12.12   | 1.06               |
| Archer               | 9.98                          | 11.63                        | 1.17               | 8.00                      | .80                | 9.85   | .99                | 10.42   | 1.04               |
| Average yield        | 11.33                         | 11.55                        |                    | 10.35                     |                    | 11.79  |                    | 11.65   |                    |
| Percentage of mean   |                               |                              | 1.02               |                           | .92                |  | 1.04               |   | 1.03               |
| Grand average:       |                               |                              |                    |                           |                    |  |                    |   |                    |
| Yield                | 12.54                         | 13.28                        |                    | 10.76                     |                    | 13.12  |                    | 12.98   |                    |
| Percentage of mean   |                               |                              | 1.05               |                           | .86                |  | 1.05               |   | 1.04               |

Therefore, for comparison, there are three different methods of computation, namely, the percentages of the means based upon (1) the composite yields of spring wheat, oats, and barley, Table 23; (2) the yields of corn only, based on 200 pounds of total dry weight of grain and stover as equivalent to 1 bushel of wheat, Table 25; and (3) the composite yields of corn, spring wheat, oats, and barley, with 200 pounds of the dry weight of the corn grain and stover as an equivalent of 1 bushel of wheat, Table 24.

Rotations 5 and 8 are not included in Tables 25 and 26, nor in Figures 71 and 72, as the corn crop does not enter into these two rotations, summer-fallowing being substituted for corn. The percentage calculations are therefore based upon four groups of rotations and tillage methods instead of upon five, as is the case with Tables 19 to 24, inclusive, and with Figures 68, 69, and 70.

It will be observed that in Figure 72 a fourth line representing the means of the other three means for all stations has been inserted for each station. This was done to facilitate direct comparison between the three different methods of computation. Although there is



no such close agreement as is found in Figure 70, it will be observed that the general relative efficiency of the different groups is not materially different under the different methods of computation, except in the case of the relations between continuous cropping and alternate fallowing. This difference is obviously due to the failure of corn to respond to summer-fallowing as the small grains do. The other discrepancies are nearly all differences in degree rather than differences in direction of deviation in these relations.

A careful study of Tables 23, 24, 25, and 26 and Figures 71 and 72 seems to indicate that, notwithstanding the erratic behavior of the corn crop as compared with wheat, oats, and barley, the methods of analyses and interpretation employed in the preceding pages lead to reliable conclusions concerning the relative efficiency of the different methods of crop rotation and tillage.

Reverting to Table 23, of which Figure 70 is a graphic illustration, attention is called to the following facts:

Rotations 1, 4, and 6, 3-year rotations with wheat, oats, or barley sown on disked corn stubble, stand No. 1 at 14 out of the 16 stations, Mandan and Scotts Bluff being the exceptions.

Rotations 2, 3, 7, and 9, 3-year rotations with wheat, oats, or barley sown on plowed corn stubble, stand No. 2 at 10 stations; No. 3 at 4 stations (Belle Fourche, Huntley, North Platte, and Colby); and No. 1 at 2 stations (Mandan and Scotts Bluff).

Rotations 5 and 8, 3-year rotations of wheat, oats, and fallow (the wheat following the fallow in 5 and the oats following the

TABLE 27.—Relative rank of three groups of rotations, continuous cropping, and alternate fallow at 16 field stations in the northern Great Plains area

| Field stations                           | Relative rank                              |                                  |                                   |  |                                       | Total |
|--|--|----------------------------------|-----------------------------------|--|---------------------------------------|-------|
|  | Continu-<br>ous crop-<br>ping<br>(Group 1) | Alternate<br>fallow<br>(Group 2) | Rotations 5<br>and 8<br>(Group 3) | Rotations 2, 3,<br>7, and 9<br>(Group 5) | Rotations 1, 4,<br>and 6<br>(Group 4) |       |
| Moccasin.....                            | Fourth..                                   | Fifth..                          | Third..                           | Second..                                 | First..                               | ..... |
| Belle Fourche.....                       | Fifth..                                    | Fourth..                         | Second..                          | Third..                                  | do..                                  | ..... |
| Sheridan.....                            | do..                                       | do..                             | Third..                           | Second..                                 | do..                                  | ..... |
| Mandan.....                              | do..                                       | Third..                          | Fourth..                          | First..                                  | Second..                              | ..... |
| Dickinson.....                           | do..                                       | Fourth..                         | Third..                           | Second..                                 | First..                               | ..... |
| Williston.....                           | do..                                       | do..                             | do..                              | do..                                     | do..                                  | ..... |
| Edgeley.....                             | Fourth..                                   | Fifth..                          | do..                              | do..                                     | do..                                  | ..... |
| Ardmore.....                             | do..                                       | do..                             | do..                              | do..                                     | do..                                  | ..... |
| Huntley.....                             | Fifth..                                    | Fourth..                         | Second..                          | Third..                                  | do..                                  | ..... |
| North Platte.....                        | do..                                       | do..                             | do..                              | do..                                     | do..                                  | ..... |
| Scotts Bluff.....                        | do..                                       | do..                             | do..                              | First..                                  | Second..                              | ..... |
| Akron.....                               | Third..                                    | do..                             | Fifth..                           | Second..                                 | First..                               | ..... |
| Assiniboine.....                         | Fifth..                                    | do..                             | Fourth..                          | do..                                     | do..                                  | ..... |
| Hays.....                                | do..                                       | do..                             | Third..                           | do..                                     | do..                                  | ..... |
| Colby.....                               | do..                                       | Second..                         | Fourth..                          | Third..                                  | do..                                  | ..... |
| Archer.....                              | do..                                       | Fourth..                         | Third..                           | Second..                                 | do..                                  | ..... |
| Total (points):                          |  |                                  |                                   |  |                                       |       |
| Actual.....                              | 75   | 63                               | 50                                | 34                                       | 18                                    | 240   |
| Theoretical.....                         | 80   | 64                               | 48                                | 32                                       | 16                                    | 240   |
| Difference.....                          | -5   | -1                               | +2                                | +2                                       | +2                                    | ..... |
| Percentage:                              |  |                                  |                                   |  |                                       |       |
| Actual total÷theo-<br>retical total..... | 0.94                                       | 0.98                             | 1.04                              | 1.06                                     | 1.12                                  | ..... |
| Theoretical total÷<br>actual total.....  | 1.06                                       | 1.02                             | .96                               | .94                                      | .88                                   | ..... |

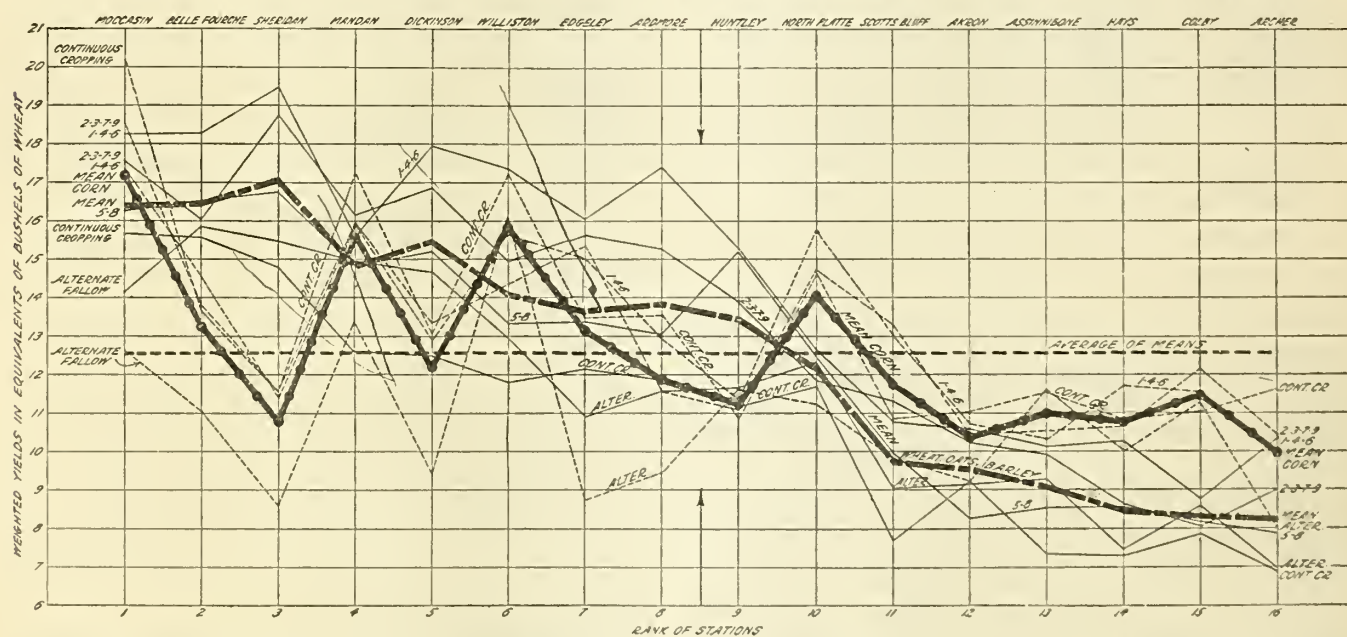


FIGURE 71.—Composite acre yields of wheat, oats, and barley, expressed in equivalents of bushels of wheat, as given in Table 23, and the acre yields of corn as given in equivalents of bushels of wheat in Table 26

fallow in 8), stand No. 3 at 9 stations; No. 2 at Belle Fourche, Huntley, and North Platte; No. 4 at Mandan, Assiniboine, and Colby, and No. 5 at Akron.

Alternate fallowing stands No. 4 at 10 stations; No. 5 at Moccasin, Edgeley, and Ardmore; No. 3 at Mandan and Assiniboine; and No. 2 at Colby.

Continuous cropping stands No. 5 at 12 stations; No. 4 at Moccasin, Edgeley, and Ardmore; and No. 3 at Akron.

The relative effectiveness of these five methods is shown in statistical form in Table 27, and graphically in Figures 73 and 74, all of which have been developed from Table 23 using the acre yields weighted for differences in tillage systems from wheat, oats, and barley as a basis and expressed in equivalents of bushels of wheat. No fixed prices for any of the grains were considered in these computations.

By grouping the rotations as has been done in the preceding tables and figures, the effects of time and depth of plowing have been obscured. This office undoubtedly has more facts bearing upon this subject than exist in comparable form elsewhere. This material eventually will be interpreted and published, but the lack of both time and space makes it impracticable to undertake such publication at this time. The study of this material, in preparing the present publication, taken in connection with what has been published previously, seems to warrant the following brief summary.

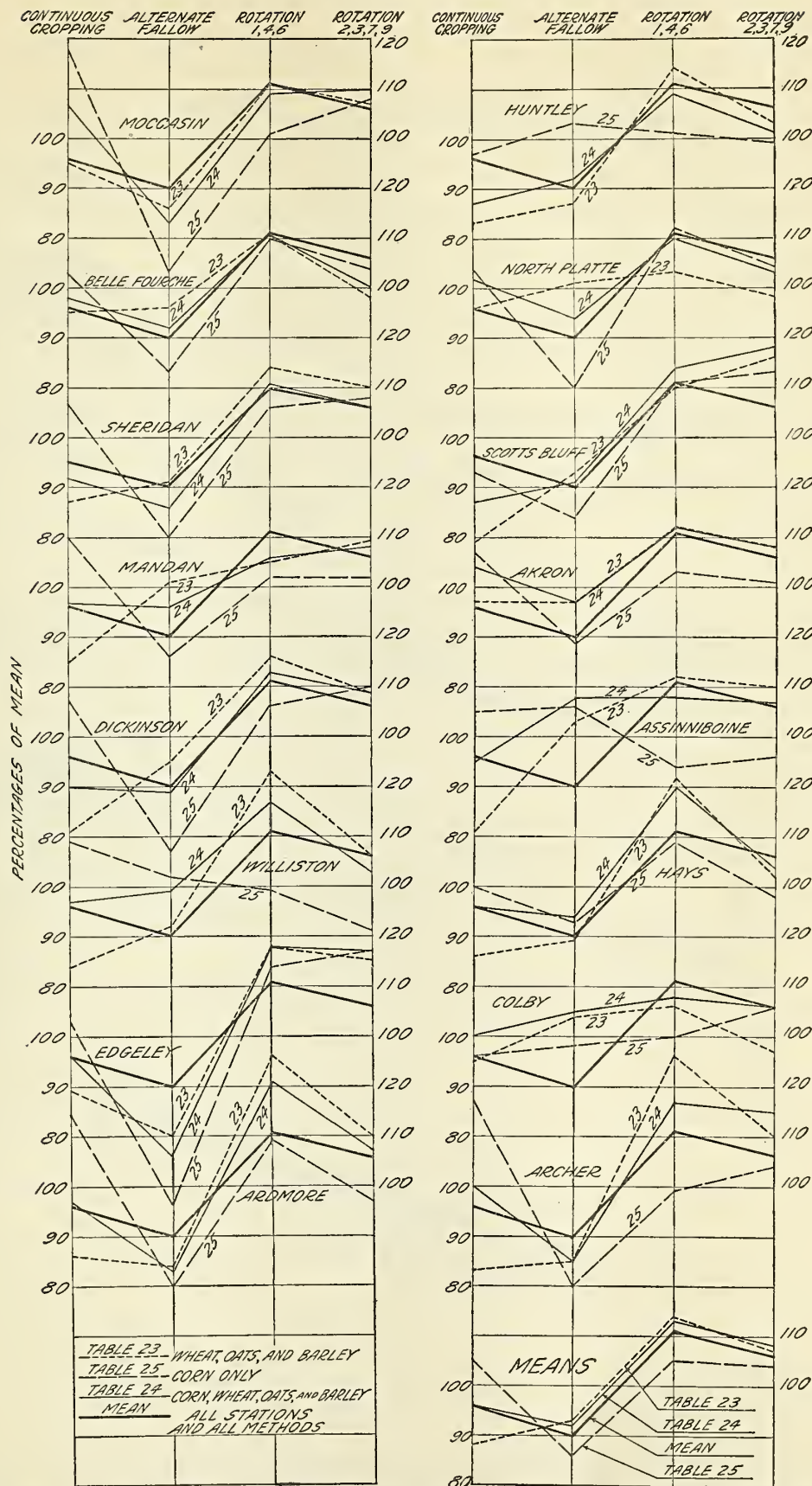


FIGURE 72.—Relative efficiency of four tillage and rotation systems as shown by the percentages of the means, computed from three bases from Tables 24, 23, and 25, respectively, composite yields of corn, wheat, oats, and barley being the base in Table 24; composite yields of wheat, oats, and barley in Table 23; and corn only in Table 25. Percentages below the mean (100) are shown along the left-hand margin and those above the mean along the right-hand margin of each section



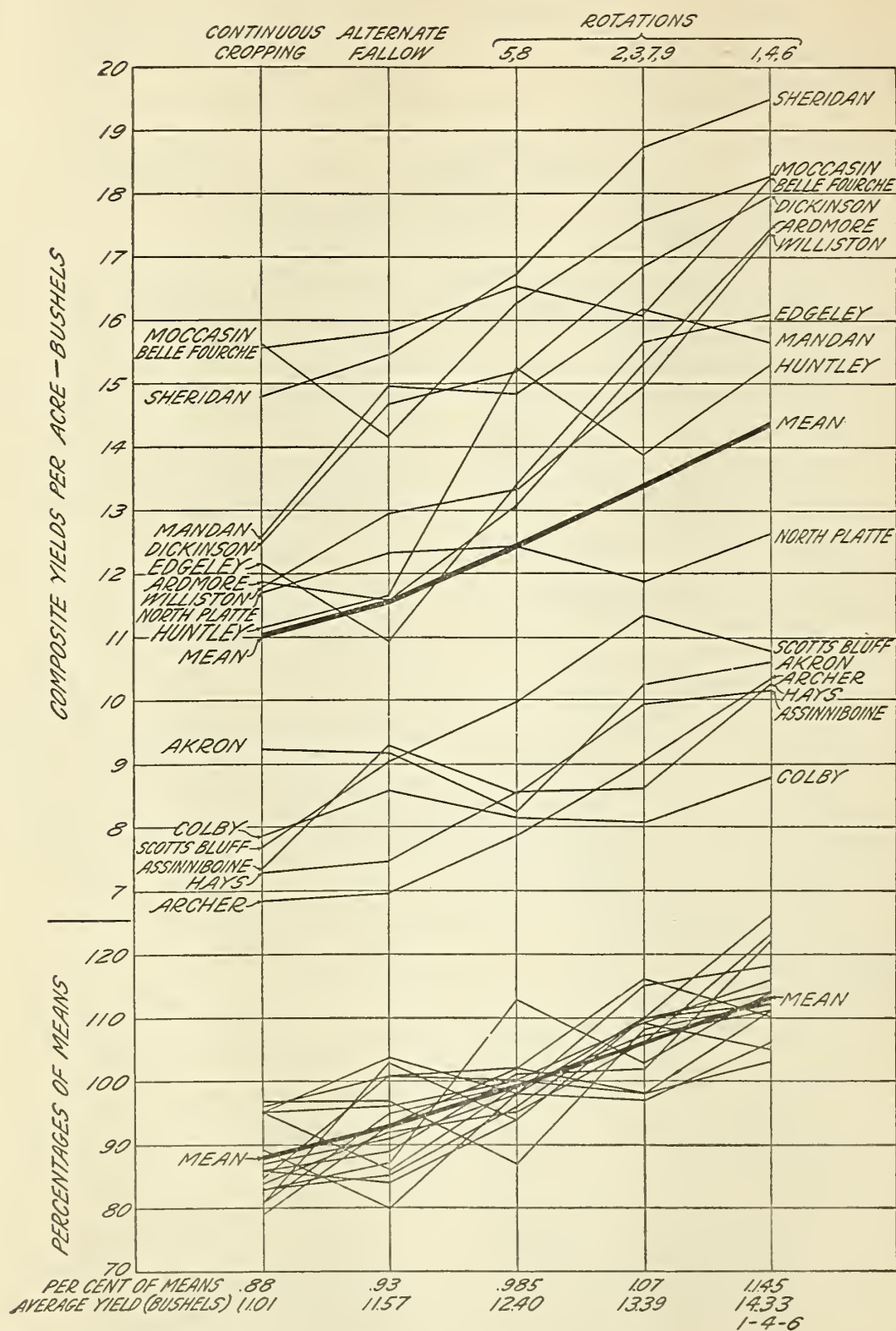


FIGURE 73.—Diagram illustrating Table 23. The composite acre yields obtained at 16 northern Great Plains field stations from wheat, oats, and barley, expressed in equivalents of bushels of wheat per acre, and the percentage of the mean for each group of rotations is shown at the bottom of the diagram. The rotations for each station are grouped as in Table 23 except that the relative positions of Groups 4 and 5 have been transposed in order to have them appear in the order of magnitude of the yields from left to right



## PREPARING THE SEED BED

The time and depth of plowing, listing, disking, or duck footing the soil in the preparation of a suitable seed bed is dependent upon many local and seasonal factors, among which are the following: The character and the physical condition of the soil, and the time when the economical distribution of farm laborers, teams, tractors, disks, cultivators, and other implements can be used to the best advantage; the probable effects of climatic conditions, likely to prevail during the interval of time between the harvesting of one crop and the seeding of the next crop, such as the retention of soil moisture by the catching of snow and the retention of rainfall; soil blowing; the loss of soil moisture by weed growth; and the effects of the freezing and thawing of the soil during the winter.

The object sought in preparing the seed bed is to provide a mellow, well-tilled, but fairly compact surface layer of soil from 4 to 6 inches deep, as free as possible from ungerminated weed seeds, and with as ample a supply as possible of soil moisture at the time of seeding. How to secure these conditions at the lowest possible cost in the expenditure of labor is a perennial problem that will demand a different solution for every season, every farm, and every crop.

Each individual farmer must rely upon his knowledge of his farm, its soil, the local climate, and the adaptation of different crops and different varieties and strains of crops to the different soils of his farm. He must learn most of these facts from his own personal experience and observation or from some other farmer who has acquired his knowledge from local experience and observation.

Reducing the cost of production of farm crops and at the same time increasing the yields and the quality of these crops seems to be the most feasible if not the only way of relieving the agricultural conditions that have attracted so much attention during the last five years. Much has been accomplished toward reducing the cost of harvesting and threshing by the introduction of the small combines and other harvesting devices, but much remains to be done toward reducing the cost of preparing the seed bed and sowing the crop. The duck-foot cultivator and other similar types of implements that in a large way will replace the plow seem to be very promising. The plow has been, and probably long will be, a very useful implement, but there is nothing sacred about it. If, as now seems certain, there are other implements that can be used more economically in preparing the seed bed on the broad, level prairies of the Great Plains, there should be no hesitancy about adopting them as soon as their efficiency has been established.

Now that we know that the root zone of nearly all agricultural crops extensively grown in that region extends far deeper than the deepest plowing, that a good seed bed from 4 to 6 inches deep will produce just as good crops as one twice that depth, and that the receptivity and retentivity of the soil to water is as fully attained on most prairie soils by having the first 4 to 6 inches of the surface soils in proper condition, there is no longer any excuse for the universal use of the old-fashioned moldboard plow. The duck-foot type of cultivator as an implement for the destruction of weeds, on some soils, is more efficient than the plow, and it leaves the surface in better condition to withstand soil blowing and to catch and retain water. Ogaard<sup>7</sup>

<sup>7</sup> OGAARD, A. J. SUMMER TILLAGE IMPLEMENTS. Mont. State Col. Agr. Ext. Serv. Bul. 79, 42 p., illus. 1926.

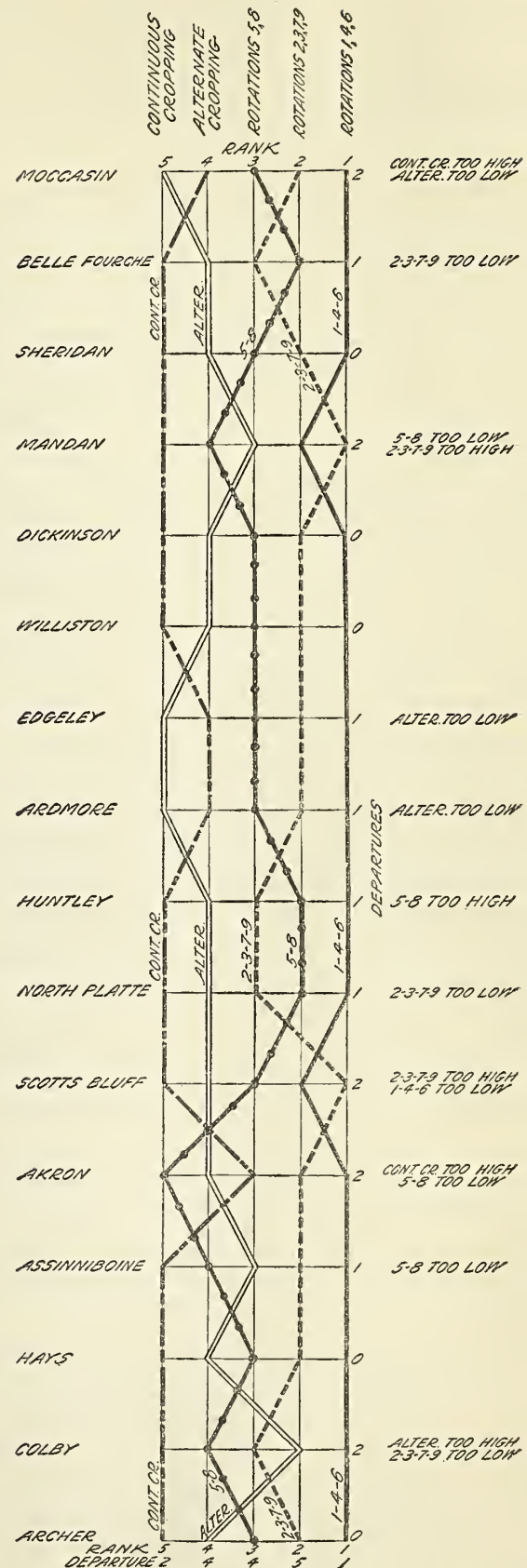


FIGURE 74.—Departures from the regular rank of certain tillage-method groups at some stations. The number of such departures for each station is given at the right hand and for each group at the bottom.



has described a large number of labor-saving tillage implements, and new ones are constantly being introduced. The farmers of the Great Plains should keep themselves posted on these new implements, for it is upon them that they must depend largely in reducing the cost of crop production.

#### ECONOMIC PROBLEMS

The farmers of to-day are faced with an anomalous—it seems almost an impossible—problem, that of reducing the cost of production without increasing the volume of production of some of the staple farm products. The cost of production of manufactured articles has been brought to a high state of efficiency under the stimulus of a constantly increasing demand for their products. The farmer has no such incentive. He knows that there is an overproduction of many of his products, and he sees no relief in the near future, for he has to compete in the world markets, and vast areas of agricultural land are being brought into use; and everything that lessens the cost of production or transportation anywhere in the world, except in his own immediate locality, makes his struggle more difficult. His only hope seems to be that possibly he may, by more efficient methods, implements, and managerial ability drive some other farmer out of business and convert him and his family from competitors in agricultural production into consumers of agricultural products. This is being done on an enormous scale throughout the United States at the present time.

#### A WORKING HYPOTHESIS FOR PLANNING ROTATION AND TILLAGE METHODS FOR THE NORTHERN GREAT PLAINS

Having presented certain facts, and certain methods of analysis and interpretation of these facts, with reference to the relative effectiveness of certain rotations and tillage methods, the next step is to present a broad generalization based upon these facts in the form of a working hypothesis that will enable the farmer to apply the results of these investigations to his problems. This is a difficult undertaking, for it is well known that no broad generalization ever quite fills any particular combination of conditions. Life-insurance companies have worked out statistical tables which enable them to state definitely just how tall the "average man" should be; how much he should weigh at certain periods of his life; how long he should live; and when, how, and why he should die; but they have never yet found the "average man" who has fully met all the specifications. But without some such working hypothesis, life insurance would be impossible. For similar reasons it is necessary for every farmer who plans a rotation system for his farm to have a working hypothesis. On the basis of the foregoing facts the working hypotheses that follow are presented.

After making allowance for the extra-labor cost per acre for summer-fallowing and for the difference in cost between disking and plowing for small grain sown on corn stubble, the relative effectiveness of the five systems considered in these groups, on the average for all of the 16 northern Great Plains field stations for 228 crop years, is as follows: System 1, continuous cropping, 1 per cent; system 2, alternate fallowing, 1.06 per cent; system 3, three-year rotations with summer-fallow every third year, 1.13 per cent; system 4, three-year rotations of corn, oats, and wheat or barley, land plowed every year, 1.23 per cent; system 5, three-year rotations the same as the preceding group, except that the corn stubble is disked instead of being plowed for the following grain crop, 1.31 per cent.

That is to say, the annual net returns per acre from the land actually cropped, after allowing for the extra-labor cost of the summer-fallowing, on the average from alternate fallowing is about 6 per cent greater than from continuous cropping, but there are only half as many acres harvested, and the interest and taxes on the fallow land are not provided for in this estimate.

If only one-third of the land is in fallow as in system 3, the annual net returns should be about 13 per cent higher than from continuous cropping per acre of cropped land; and interest and taxes on only one-third of the farm are left unprovided for. In system 4 the entire farm is in crop, and the annual net return per acre from the entire farm should be about 23 per cent higher than from continuous cropping to the same crop, leaving no idle land for which interest and taxes must be provided. In system 5 the annual net returns should be about 31 per cent higher than from continuous cropping to the same crop. The greater return from system 5, as compared with system 4 is due mainly to two causes: (1) Slightly lower costs of production due to disking instead of plowing the corn stubble—only 3½ per cent allowance has been made in these estimates for this difference—; and (2) higher yields from the disked corn stubble as compared with the plowed stubble.

In the slow and devious journey from special verified facts up to this generalization many exceptions and contradictions have been noted. It therefore seems desirable to look a little closer into some of the assumptions involved in this generalization. These may have been overlooked, but they should be taken into consideration before accepting any working hypothesis as a solution of the major agricultural problems of the entire Great Plains area or any section of it.

In Table 28 the ratios of the relative effectiveness of the five systems of crop rotations and tillage methods are given, for each of the 16 northern Great Plains field stations from which the ratios of 1.00, 1.06, 1.13, 1.23, and 1.31 were developed. It will be noted that the ratio of 1.06 is the average of 16 ratios ranging from 0.90 to 1.27; that for 1.13 ranging from 0.89 to 1.36; that for 1.23 ranging from 1.02 to 1.47; and that for 1.31 ranging from 1.08 to 1.51.

TABLE 28.—*Ratios between continuous cropping and alternate fallow and between continuous cropping and three groups of crop rotations at 16 field stations in the northern Great Plains area*

[Continuous cropping is taken as a basis for the comparison of acre yields expressed in equivalents of bushels of wheat, as shown in Table 25]

| Field station      | Group 1,<br>continuous<br>cropping | Yields from alternate fallow and from various groups of rotations each divided by yields from continuous cropping |                                  |   |                                      |
|--------------------|------------------------------------|---|----------------------------------|---|--------------------------------------|
|                    |                                    | Group 2,<br>alternate<br>fallow   | Group 3,<br>rotations 5<br>and 8 | Group 5,<br>rotations 2,<br>3, 7, and 9 | Group 4,<br>rotations 1,<br>4, and 6 |
| 1                  | 2                                  | 3   | 4                                | 5                                       | 6                                    |
| Moccasin.....      | 1                                  | 0.91  | 1.04                             | 1.12                                    | 1.17                                 |
| Belle Fourche..... | 1                                  | 1.02  | 1.06                             | 1.03                                    | 1.17                                 |
| Sheridan.....      | 1                                  | 1.05  | 1.13                             | 1.27                                    | 1.32                                 |
| Mandan.....        | 1                                  | 1.19  | 1.18                             | 1.28                                    | 1.24                                 |
| Dickinson.....     | 1                                  | 1.18  | 1.22                             | 1.35                                    | 1.44                                 |
| Williston.....     | 1                                  | 1.10  | 1.13                             | 1.27                                    | 1.47                                 |
| Edgeley.....       | 1                                  | .90   | 1.10                             | 1.29                                    | 1.32                                 |
| Ardmore.....       | 1                                  | .98   | 1.10                             | 1.29                                    | 1.47                                 |
| Huntley.....       | 1                                  | 1.05  | 1.36                             | 1.25                                    | 1.37                                 |
| North Platte.....  | 1                                  | 1.05  | 1.06                             | 1.02                                    | 1.08                                 |
| Scotts Bluff.....  | 1                                  | 1.18  | 1.30                             | 1.47                                    | 1.40                                 |
| Akron.....         | 1                                  | .99   | .89                              | 1.11                                    | 1.15                                 |
| Assiniboine.....   | 1                                  | 1.27  | 1.16                             | 1.35                                    | 1.38                                 |
| Hays.....          | 1                                  | 1.03  | 1.17                             | 1.18                                    | 1.41                                 |
| Colby.....         | 1                                  | 1.10  | 1.04                             | 1.03                                    | 1.12                                 |
| Archer.....        | 1                                  | 1.02  | 1.15                             | 1.32                                    | 1.51                                 |
| Average.....       | 1                                  | 1.06  | 1.13                             | 1.23                                    | 1.31                                 |



If one were to consult the original data it would be found that there is a similar range in the average of the 684 crop-year yields that entered into the 64 ratios shown in Table 28.

If, however, one were to study the data contained in Miscellaneous Circular No. 81, it would be found that many of the seeming inconsistencies are accounted for by the combinations of soil and climatic conditions at the several stations during different years. For instance, Table 28 shows that the ratios of alternate fallowing are below continuous cropping at Moccasin, Edgeley, Ardmore, and Akron. This is undoubtedly due largely to the very impervious character of the subsoil and the consequent low storage capacity for water at these stations. The peculiar reaction to the different systems at Huntley where there is a relatively low reaction to alternate fallowing but a high reaction to the summer-fallowing in rotations 5 and 8 where the summer-fallowing occurs once in three years instead of in alternate years, and the very small differences shown from different methods at North Platte, Akron, and Colby are undoubtedly due to local conditions. But just what these local conditions are is not so obvious as are the subsoil conditions at Moccasin, Edgeley, Ardmore, and Akron. Further study will probably explain these and some other seeming anomalies.

There are other assumptions involved in this working hypothesis that are perhaps more complex than any other feature of the subject of crop rotation. These are the relative values of the several crops entering into the rotation. In these estimates the units of measurement have been bushels of wheat, and it has been shown, so far as the crop-yielding capacity of the soil is concerned, that 1 bushel of wheat is equivalent to 2 bushels of oats and to 1½ bushels of barley. It has been assumed that the average cost of producing these three crops bears the same relations as the yield. That is to say, there is practically no difference in the cost of producing an acre of wheat, an acre of oats, or an acre of barley. Few, if any, practical farmers will question this assumption. It does, however, cost more to produce an acre of corn than it does to produce any of the small grains. But this extra cost is governed to such an extent by the way the crop is raised and the use that is made of it that it is very difficult to estimate it. Some of these variable factors are as follows: Whether it is listed or surface planted; how many times it will require cultivating to keep it free from weeds; whether the cultivating can be done with a 4-row, a 2-row, or a 1-row cultivator; how the crop is to be harvested—whether cut for silage without husking, whether cut with a corn binder, whether shocked and husked from the shock and the stover stacked or stored in barns, whether shucked from the standing stalks which are later eaten off by stock, or whether handled in several other ways.

One of the many things that these investigations have demonstrated is that corn can be profitably grown throughout the northern Great Plains if proper methods are used to reduce the cost of production and to utilize both the grain and the stalks to the fullest possible extent by converting them into beef, pork, mutton, wool, or dairy or poultry products and to provide food for work or breeding stock. Just how to accomplish this must be left for each individual farmer to decide for himself.

A goodly portion of the value of the corn crop consists of the value of the stalks for feed and the beneficial

effects of this crop upon the soil in preparing it for the wheat crop that is to follow it. In Table 29, both the total dry weight of the unhusked cornstalks and the bushels of corn are given. In estimating the value of the corn crop the value of grain only is used. It is assumed that the food value of the corn stover will compensate for any difference between the cost of production and the value of the grain.

The oat crop must be considered in somewhat the same way as the corn crop in that both the grain and the straw must be converted into some kind of animal products before they are sold. The wheat crop is the only one used in this connection which can be considered as a cash crop, although a cash price is used in the estimates for both oats and corn grain. The farmer must, however, get his profits on both these crops from the animal products they afford, the manure they make, and the improved condition of the soil for raising wheat after the corn crop.

TABLE 29.—Average annual acre yields of wheat under continuous cropping and under alternate fallowing and of wheat, oats, and corn in rotation 1 at 16 field stations in the northern Great Plains area

[The yields here given are not weighted for tillage methods. The average yields of wheat in column 3 are based on biennial yields which have been divided by 2 in order to convert them into annual-yield equivalents]

| Field stations—             | Years  | Wheat                 |                       |            |                   | Corn, rotation 1 |         |
|-----------------------------|--------|-----------------------|-----------------------|------------|-------------------|------------------|---------|
|                             |        | Alter-nate fallow-ing | Contin-uous crop-ping | Rotation 1 | Oats, rota-tion 1 | Total            | Grain   |
| 1                           | 2      | 3                     | 4                     | 5          | 6                 | 7                | 8       |
| Showing normal yields:      | Number | Bushels               | Bushels               | Bushels    | Bushels           | Pounds           | Bushels |
| Moccasin.....               | 18     | 9.45                  | 14.2                  | 19.5       | 33.9              | 4,447            | 21.8    |
| Belle Fourche.....          | 18     | 11.35                 | 14.7                  | 17.5       | 33.1              | 3,562            | 17.4    |
| Sheridan.....               | 9      | 11.55                 | 13.2                  | 17.8       | 35.5              | 2,793            | 14.1    |
| Mandan.....                 | 12     | 9.95                  | 12.0                  | 15.7       | 28.7              | 4,011            | 26.5    |
| Dickinson.....              | 19     | 10.35                 | 11.8                  | 19.8       | 34.7              | 3,334            | 16.1    |
| Williston.....              | 11     | 9.30                  | 11.8                  | 14.1       | 30.1              | 3,751            | 12.7    |
| Edgeley.....                | 16     | 6.55                  | 11.4                  | 16.9       | 29.3              | 3,798            | 5.7     |
| Ardmore.....                | 13     | 8.20                  | 11.6                  | 18.5       | 30.1              | 3,162            | 16.2    |
| Huntley.....                | 14     | 7.55                  | 10.0                  | 15.9       | 26.9              | 2,922            | 16.1    |
| North Platte.....           | 19     | 9.50                  | 11.4                  | 13.1       | 25.9              | 4,076            | 20.2    |
| Total or average....        | 149    | 9.38                  | 12.2                  | 16.9       | 30.8              | 3,586            | 16.96   |
| Showing subnormal yields:   |        |                       |                       |            |                   |                  |         |
| Scotts Bluff.....           | 9      | 7.15                  | 7.1                   | 13.0       | 18.6              | 3,376            | 20.1    |
| Akron.....                  | 17     | 5.65                  | 9.0                   | 11.8       | 17.2              | 2,754            | 12.9    |
| Assiniboine.....            | 10     | 6.60                  | 6.7                   | 9.9        | 15.0              | 2,331            | 7.7     |
| Hays.....                   | 19     | 4.15                  | 5.6                   | 7.1        | 22.5              | 2,333            | 5.6     |
| Colby.....                  | 12     | 5.60                  | 7.0                   | 6.9        | 18.6              | 2,914            | 17.5    |
| Archer.....                 | 12     | 6.70                  | 8.5                   | 12.6       | 17.4              | 2,491            | 14.1    |
| Total or average....        | 79     | 5.98                  | 7.3                   | 10.2       | 18.2              | 2,798            | 13.0    |
| Grand total or average..... | 228    | 8.10                  | 10.38                 | 14.38      | 26.09             | 3,291            | 15.37   |

#### WILL THE WORKING HYPOTHESIS WORK?

In developing this working hypothesis it has been necessary to use composite yields, ratios, and percentages. The relative cost of producing the different crops under different systems of rotation and tillage methods has been considered, but neither the relative nor the actual market prices of the several crops have been taken into consideration.

The practical farmer is interested primarily in the net returns he will get for his labor, his managerial ability, and his investment. In order to test the validity of the working hypothesis, it must be applied to a definite farm unit, using definite prices for each of the crops in computing the annual returns.

Assuming the use of a farm unit of one section—640 acres—and (where livestock production is an important factor in the farming system) such additional land as may be necessary for grazing purposes, 40 acres of the



section will be required for the farmstead, night pasture, garden, and for other crops that do not enter into the rotations, leaving 600 acres under cultivation in the general farm systems.

Assuming for the market prices those given in the Yearbook of Agriculture for 1926 as the averages received by the producer for the years 1921 to 1925, inclusive, these are, wheat \$1.137, oats \$0.404, corn, \$0.781 per bushel. For the value per ton of the total dry weight of the corn crop, including both the grain and the stover, \$9 per ton is here used. This is an

This is believed to be a fair estimate and justifies the valuation of the total dry weight of the corn grain and stover at \$9 per ton.

The acre yields from the different crops and methods are taken from Table 29, which shows that the lower six stations have abnormally low yields for wheat and oats and in some instances for corn. This is undoubtedly due largely to the fact that spring wheat and oats are not adapted to these stations. It was, therefore, decided to use the yields from all 16 stations but to segregate the 6 stations where the average spring-

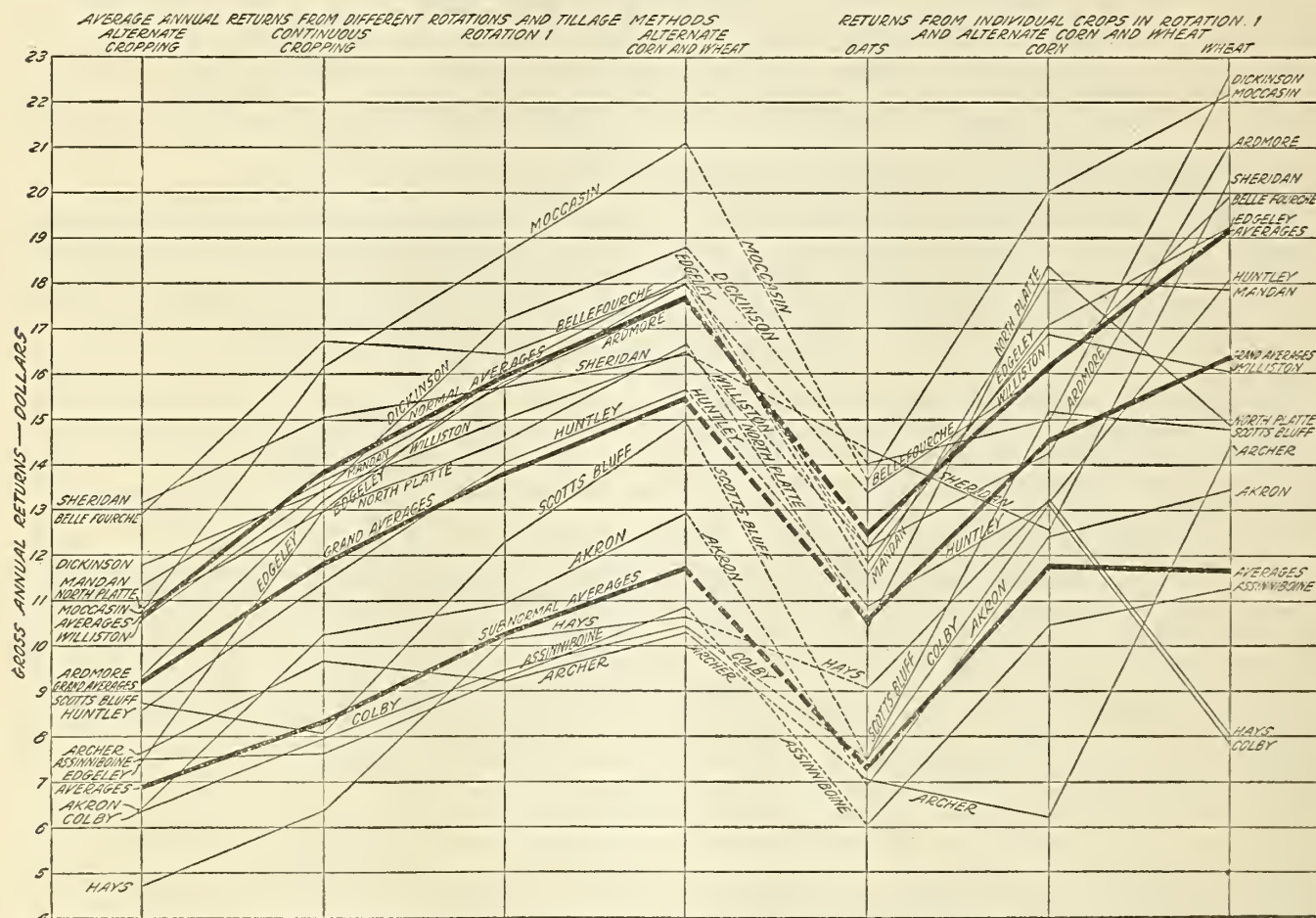


FIGURE 75.—Diagram illustrating Table 30, comparing alternate cropping to wheat and summer-fallowing, continuous cropping to wheat, rotation 1, and alternate corn and wheat. The left-hand portion of the diagram gives the annual returns in dollars per acre for the four different systems, and the right-hand portion gives returns for the individual crops in rotation 1 and in alternate cropping to corn and wheat at 16 northern Great Plains field stations

estimate arrived at as follows: The average total dry weight of the corn crop for 10 field stations is 3,586 pounds. The average yield of corn grain for the same stations is 16.96 bushels. At 70 pounds per bushel this grain would weigh 1,187 pounds. Subtracting this from 3,586 pounds gives 2,399 pounds, the weight of the corn stover. The cash value of 16.96 bushels of corn at \$0.781 per bushel is \$13.24. The estimated value at \$9 per ton of 3,586 pounds of total dry weight of grain and stover is \$16.14. Subtracting \$13.24, the value of the corn grain, gives \$2.90 as the value of 2,399 pounds of corn stover, which is \$2.41 per ton.

wheat yields were under 10 bushels and the oat yields under 24 bushels. Figures 70 and 72 show that the inclusion or exclusion of these lower yielding stations would not materially affect the relative results of the different farming systems, but in making comparisons of the gross returns per acre it seems best to treat these two groups both independently and collectively as has been done in Tables 29, 30, and 31, and in Figures 75, 76, and 77. From these it will be seen that the relative effectiveness of the different systems for the 6 stations with subnormal yields is about the same as that shown for the 10 stations having normal yields.



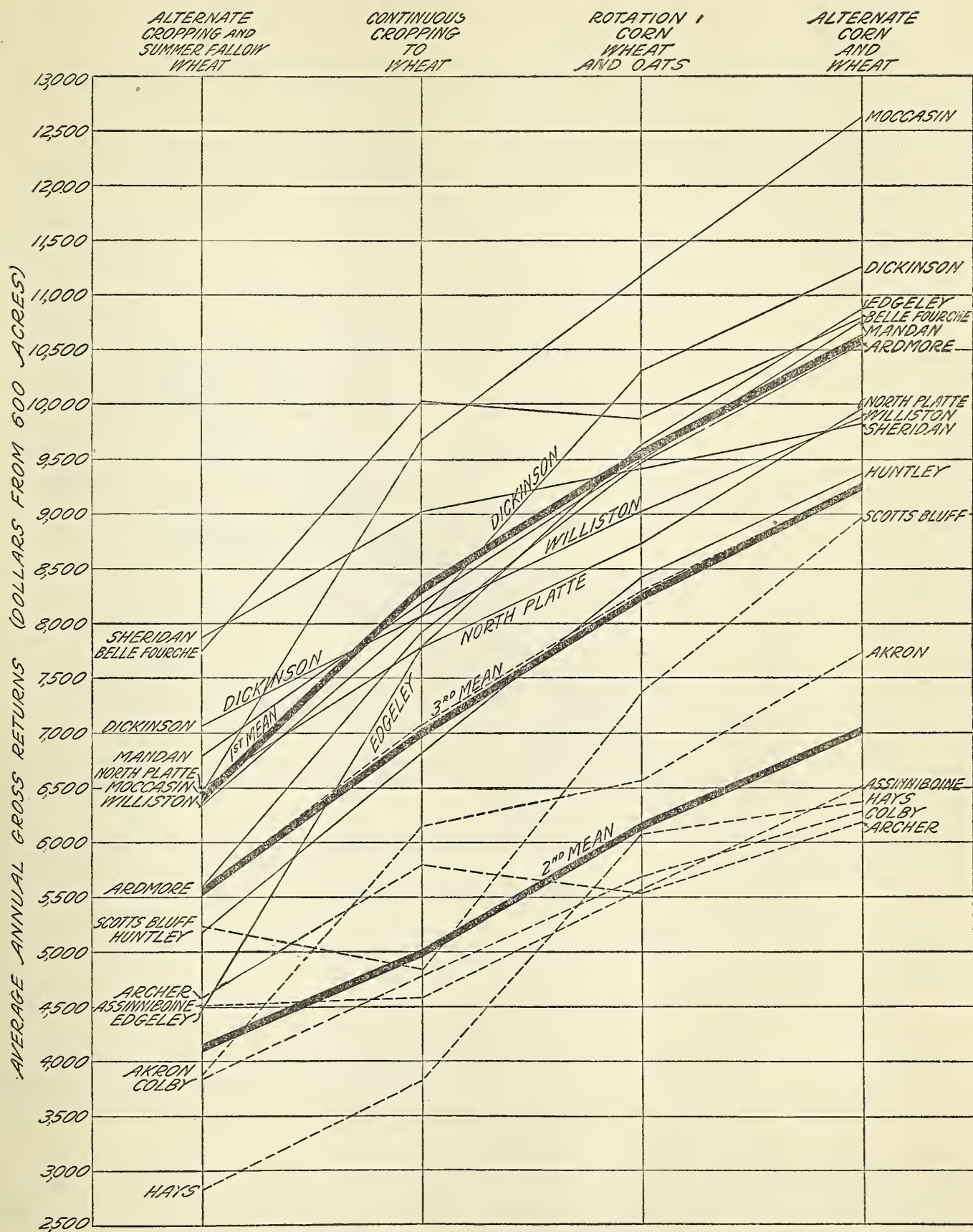


FIGURE 76.—Diagram illustrating Table 31. The estimated gross annual returns in dollars from 600 acres of cultivated land at average prices for the 5-year period, 1921 to 1925. The period for which the acre yields have been obtained is shown for each of the 16 northern Great Plains field stations in Table 19

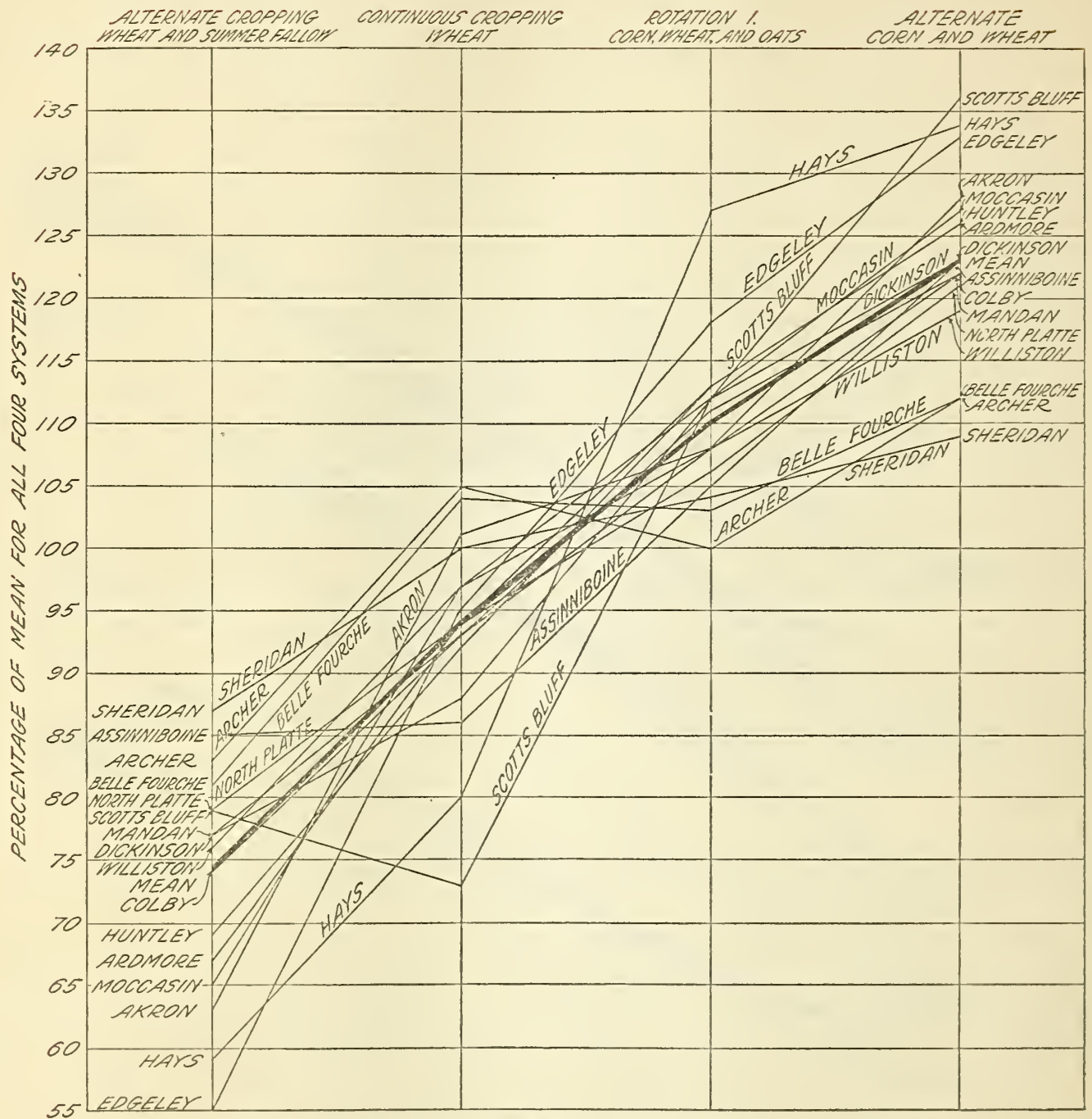


FIGURE 77.—Percentages of mean returns from each of four cropping systems, as shown in Table 31



TABLE 30.—Gross annual returns per acre from wheat, oats, and corn at average prices for the five-year period 1921 to 1925, under different rotations and tillage systems, at 16 field stations in the northern Great Plains area

[The returns given are based on the following prices for individual crops: Wheat \$1.137 per bushel; oats, \$0.404 per bushel; corn, \$9 per ton of total dry weight. The average returns given in column 2 are based on biennial yields which have been divided by 2 in order to convert them into annual returns]

| Field stations            | Alternate fallow and wheat | Continuous cropping—wheat | Rotation 1—corn, wheat, and oats | Alternate corn and wheat | Rotation 1 |                   |         |
|---------------------------|----------------------------|---------------------------|----------------------------------|--------------------------|------------|-------------------|---------|
|                           |                            |                           |                                  |                          | Oats       | Corn—total weight | Wheat   |
| 1                         | 2                          | 3                         | 4                                | 5                        | 6          | 7                 | 8       |
| Showing normal yields:    |                            |                           |                                  |                          |            |                   |         |
| Moccasin.....             | \$10.75                    | \$16.15                   | \$18.63                          | \$21.09                  | \$13.70    | \$20.01           | \$22.17 |
| Belle Fourche.....        | 12.90                      | 16.71                     | 16.43                            | 17.97                    | 13.37      | 16.03             | 19.90   |
| Sheridan.....             | 13.13                      | 15.01                     | 15.72                            | 16.41                    | 14.34      | 12.57             | 20.24   |
| Mandan.....               | 11.32                      | 13.64                     | 15.83                            | 17.95                    | 11.59      | 18.05             | 17.85   |
| Dickinson.....            | 11.77                      | 13.42                     | 17.18                            | 18.76                    | 14.02      | 15.00             | 22.51   |
| Williston.....            | 10.58                      | 13.42                     | 15.02                            | 16.46                    | 12.16      | 16.88             | 16.03   |
| Edgeley.....              | 7.45                       | 12.96                     | 16.05                            | 18.16                    | 11.83      | 17.09             | 19.22   |
| Ardmore.....              | 9.33                       | 13.19                     | 15.81                            | 17.63                    | 12.16      | 14.23             | 21.03   |
| Huntley.....              | 8.59                       | 11.37                     | 14.03                            | 15.62                    | 10.87      | 13.15             | 18.08   |
| North Platte.....         | 10.80                      | 12.96                     | 14.56                            | 16.62                    | 10.46      | 18.34             | 14.89   |
| Average.....              | 10.66                      | 13.88                     | 15.93                            | 17.67                    | 12.45      | 16.15             | 19.19   |
| Showing subnormal yields: |                            |                           |                                  |                          |            |                   |         |
| Scotts Bluff.....         | 8.73                       | 8.07                      | 12.29                            | 14.99                    | 7.51       | 15.19             | 14.78   |
| Akron.....                | 6.42                       | 10.23                     | 10.92                            | 12.91                    | 6.95       | 12.39             | 13.42   |
| Assiniboine.....          | 7.50                       | 7.62                      | 9.27                             | 10.88                    | 6.06       | 10.49             | 11.26   |
| Hays.....                 | 4.72                       | 6.37                      | 10.12                            | 10.64                    | 9.09       | 13.20             | 8.07    |
| Colby.....                | 6.37                       | 7.96                      | 9.49                             | 10.48                    | 7.51       | 13.11             | 7.85    |
| Archer.....               | 7.62                       | 9.66                      | 9.21                             | 10.30                    | 7.03       | 6.26              | 14.33   |
| Average.....              | 6.89                       | 8.32                      | 10.22                            | 11.70                    | 7.36       | 11.77             | 11.62   |
| Grand average.....        | 9.25                       | 11.80                     | 13.79                            | 15.43                    | 10.54      | 14.50             | 16.35   |

#### FOUR SYSTEMS OF FARM ORGANIZATION COMPARED

The four systems of farm organization here compared are as follows:

##### SYSTEM 1

Alternating cropping to spring wheat of 300 acres each year and summer-fallowing the other 300 acres each year.

##### SYSTEM 2

Continuous cropping to spring wheat on the same 600 acres of land every year, the land to be plowed each year either in the fall or in the spring.

##### SYSTEM 3

The farm is divided under rotation 1 into three fields of 200 acres each. One of these fields has raised a crop of corn the previous year. The corn has been cut and fed to stock. The bare corn stubble is disked or prepared for seeding with some type of cultivator as early in the spring as the land is in suitable condition for working and is then seeded to spring wheat.

Another of the 200-acre fields has raised a crop of wheat the previous year, and had been plowed as soon after harvesting the wheat as the land was in suitable condition for plowing. This field is fitted for seeding to oats at about the same time in the spring as the field for wheat.

The third 200-acre field which had raised a crop of oats the previous year is plowed or listed and planted to corn as soon as the wheat and oat crops have been seeded. The planting and the cultivating of the corn crop is all done during the interval between the seeding and the harvesting of the wheat and oats, and the harvesting of the corn crop takes place after the harvesting and threshing of the small-grain crops have been finished.

##### SYSTEM 4

As will be seen later, it has been found that the relatively low price for oats that prevailed during the years 1921 to 1925 made this much the least profitable crop of the three (see Tables 30 and 31). It therefore is proposed that system 4 be used, which is as follows:

The farm is divided into two fields of 300 acres each, upon one of which a wheat crop is raised upon disked corn stubble, and upon the other a corn crop is raised on plowed or listed wheat stubble. The distribution of labor under this system would be much the same as in system 3. There would be 400

acres of small grain and 200 acres of corn in system 3 and 300 acres of small grain and 300 acres of corn in system 4.

When a definite farm unit and definite farm prices for each of the crops grown are used it is found that these and other factors not considered in the development of the first working hypothesis have very profoundly modified some of the relations between the effectiveness of the farm systems under consideration. This was foreseen and briefly referred to on pages 19-20. These factors have caused a reversal in the relative effectiveness of continuous cropping and alternate fallowing. It has, therefore, seemed desirable to change their order in Table 29 and in the tables and figures which follow, in which alternate fallowing gives lower returns than continuous cropping. The following data are placed in a column at the left of continuous cropping. This arrangement facilitates the plotting of the results, as will be seen in Figure 75.

TABLE 31.—Gross annual returns from 600 acres of cultivated land under different rotation and tillage systems for the 5-year period 1921 to 1925 at 16 field stations in the northern Great Plains area

[The annual returns shown in this table are all obtained by multiplying the respective annual returns per acre given in Table 30 by 600]

| Field stations—                       | Gross annual returns from—           |                    |                                     |                    |  |                    |                                    |                    | Mean of gross annual returns from 4 systems |
|---------------------------------------|--------------------------------------|--------------------|-------------------------------------|--------------------|--|--------------------|------------------------------------|--------------------|---|
|                                       | System 1: Alternate fallow and wheat |                    | System 2: Continuous cropping—wheat |                    | System 3: Rotation 1—corn, wheat, and oats |                    | System 4: Alternate corn and wheat |                    |   |
|                                       | Value                                | Percentage of mean | Value                               | Percentage of mean | Value                                      | Percentage of mean | Value                              | Percentage of mean |   |
| 1                                     | 2                                    | 3                  | 4                                   | 5                  | 6  | 7                  | 8                                  | 9                  | 10  |
| Showing normal yields:                |                                      |                    |                                     |                    |  |                    |                                    |                    |   |
| Moccasin.....                         | \$6,450                              | 65                 | \$9,690                             | 97                 | \$11,178                                   | 112                | \$12,645                           | 127                | \$9,991                                     |
| Belle Fourche.....                    | 7,740                                | 81                 | 10,025                              | 104                | 9,858                                      | 103                | 10,782                             | 112                | 9,601                                       |
| Sheridan.....                         | 7,878                                | 87                 | 9,066                               | 100                | 9,432                                      | 104                | 9,846                              | 109                | 9,041                                       |
| Mandan.....                           | 6,792                                | 77                 | 8,184                               | 93                 | 9,498                                      | 108                | 10,770                             | 122                | 8,811                                       |
| Dickinson.....                        | 7,062                                | 77                 | 8,052                               | 88                 | 10,308                                     | 112                | 11,256                             | 123                | 9,170                                       |
| Williston.....                        | 6,348                                | 76                 | 8,052                               | 97                 | 9,012                                      | 108                | 9,876                              | 119                | 8,322                                       |
| Edgeley.....                          | 4,470                                | 55                 | 7,776                               | 95                 | 9,630                                      | 118                | 10,896                             | 133                | 8,193                                       |
| Ardmore.....                          | 5,598                                | 67                 | 7,914                               | 94                 | 9,486                                      | 113                | 10,576                             | 126                | 8,394                                       |
| Huntley.....                          | 5,154                                | 69                 | 6,822                               | 92                 | 8,418                                      | 113                | 9,372                              | 126                | 7,442                                       |
| North Platte.....                     | 6,480                                | 79                 | 7,776                               | 94                 | 8,736                                      | 106                | 9,972                              | 121                | 8,241                                       |
| Average.....                          | 6,397                                |                    | 8,330                               |                    | 9,556                                      |                    | 10,599                             |                    | 8,721                                       |
| Percentage relation, 10 stations..... |                                      | 73                 |                                     | 96                 |  | 110                |                                    | 122                |   |
| Showing subnormal yields:             |                                      |                    |                                     |                    |  |                    |                                    |                    |   |
| Scotts Bluff.....                     | 5,238                                | 79                 | 4,842                               | 73                 | 7,374                                      | 112                | 8,994                              | 136                | 6,612                                       |
| Akron.....                            | 3,852                                | 63                 | 6,138                               | 101                | 6,552                                      | 108                | 7,746                              | 128                | 6,072                                       |
| Assiniboine.....                      | 4,500                                | 85                 | 4,572                               | 86                 | 5,562                                      | 105                | 6,528                              | 123                | 5,291                                       |
| Hays.....                             | 2,832                                | 59                 | 3,822                               | 80                 | 6,072                                      | 127                | 6,384                              | 134                | 4,778                                       |
| Colby.....                            | 3,822                                | 74                 | 4,776                               | 93                 | 5,694                                      | 111                | 6,288                              | 122                | 5,145                                       |
| Archer.....                           | 4,572                                | 83                 | 5,796                               | 105                | 5,526                                      | 100                | 6,180                              | 112                | 5,519                                       |
| Average.....                          | 4,136                                |                    | 4,991                               |                    | 6,130                                      |                    | 7,020                              |                    | 5,570                                       |
| Percentage relation, 6 stations.....  |                                      | 74                 |                                     | 90                 |  | 110                |                                    | 126                |   |
| Grand total.....                      | 5,549                                |                    | 7,078                               |                    | 8,271                                      |                    | 9,257                              |                    | 7,539                                       |
| Percentage relation, 16 stations..... |                                      | 74                 |                                     | 94                 |  | 110                |                                    | 123                |   |

It must constantly be borne in mind that these figures also leave out of consideration some important factors. Gross production only is being considered. It may be that when the cost of production is taken into consideration these figures will be materially modified. It seems, however, at this stage of the investigation that the margin in favor of rotation of crops is so large that it will not be entirely obliterated. The real purpose of these



investigations is to bring plainly before the reader the many factors involved rather than to arrive at any generalization that will fit all cases.

It will be remembered that the working hypothesis postulated the relations between the yields per acre from continuous cropping, alternate fallowing, rotations 1, 4, and 6 were 1.00, 1.06, 1.31 (Table 28); whereas according to Table 31 the relations between the gross farm income from 600 acres of land under cultivation would be from continuous cropping, 1.00; from alternate fallowing, 0.76; and from rotation 1, 1.15, using the figures from stations with normal yields as given in Table 31.

This does not seem to be a very close agreement between the first working hypothesis and the facts established by 149 crop years of practical experience. These discrepancies are due to the fact that in the first instance the calculations were designed to show relations between the relative efficiency of the different systems in yield per acre of wheat and oats, expressed in equivalents of bushels of wheat after making allowances for the differences in cost of production. Thus the differences in the market prices of the different grains, the economic features of the most efficient use of the capital invested in the farm and its equipment, and the labor of the farmer and his employees were disregarded. But in the second case these latter factors have been taken into consideration. Moreover, the relative costs of production of the different crops grown under the different systems have not yet entered into the hypothetical calculations, but they will be considered later.

Table 29 was prepared from the detailed data for each year for all the 16 field stations. It gives the average yields actually obtained from wheat, oats, and corn under continuous cropping and in rotation 1. For alternate fallowing for wheat the yields given in Table 20 and in the original data have been divided by 2 for use in Table 29. This is done because the original figures represent biennial yields instead of annual. Under this system the farm is divided into two fields, one of which is fallowed and the other cropped. The next year the field cropped the previous year is fallowed, and the field that was fallowed is cropped. Thus, each field raises one crop in two years.

Table 29 is divided into two parts. The upper portion includes the 10 stations where, under continuous cropping, the average acre yields of spring wheat exceeded 10 bushels and those of oats 24 bushels. The lower portion includes the six stations where for reasons heretofore explained the yields fall below this standard. It therefore seemed desirable to keep these two groups segregated in Tables 29, 30, and 31, and in Figure 76, and to consider mainly the data from the 10 stations where conditions were more nearly normal, using the data from the other six stations for comparison.

Table 30 was developed from Table 29 by multiplying the acre yields given in Table 29 by the respective prices for each crop; namely, \$1.137 per bushel for wheat, \$0.404 per bushel for oats, and \$9 per ton for total dry weight of corn.

The figures in columns 2 and 3 in Table 30 are calculated from those in columns 3 and 4 in Table 29, and those in columns 6, 7, and 8 in Table 30 from those in columns 6, 7, and 8 in Table 29, in the order named. The figures in column 4 of Table 30 are obtained by taking the average of returns for oats, corn, and wheat given in columns 6, 7, and 8 of Table 30, and those in column 5 are the averages of the figures given in columns 7 and 8 in Table 30.

Figure 75 is a graphic presentation of the data in Table 30. In this figure the two groups are not segregated as they are in Table 30, but the mean for each group is given, as well as that for the 16 stations collectively. It will be seen that many of the differences in the relative effectiveness of the different systems are closely related to the relative returns from the different crops. Many other interesting comparisons can also be made.

Table 31 has been developed from Table 30 by multiplying all the figures in Table 30 by 600 and transferring the products to Table 31 in the same order in which they appear in Table 30, thus presenting the gross returns in dollars from 600 acres under the different systems of tillage and rotations for each of the 16 stations and the average for each of the two groups of stations.

Columns 6, 7, and 8 in Table 30 have been omitted from Table 31, but column 10 in Table 31 has been used to represent the mean of the gross returns from the four systems. The percentage of this mean is given for each station and for each system, thus providing a means of direct comparison between the different stations and systems such as was used in developing the first working hypothesis.

Table 32 has been developed from Table 31, by dividing the yields given in columns 4, 6, and 8 by those given in column 2. This gives the ratios between alternate fallowing, used as a basis and assigned a value of 100, and the other three systems, namely, continuous cropping, rotation 1, and alternate corn and wheat.

Figures 76 and 77 are graphic presentations of the data contained in Table 31. Figure 76, like the table, is divided into two parts, representing, respectively, the 10 stations having average returns that are normal or above normal for all four systems (with three exceptions, namely, Edgeley and Huntley for alternate fallowing and Huntley also for continuous cropping) and the six stations having returns below normal for all systems.

TABLE 32.—*Ratios between alternate fallowing and continuous cropping and between alternate fallowing and rotation 1, and between alternate fallowing and alternate corn and wheat at 16 field stations in the northern Great Plains area*

[Alternate fallowing is taken as a basis for the comparison of the gross returns from 600 acres at prevailing prices for wheat, oats, and corn, computed from Table 31]

| Field stations—           | Yields from rotation 1 and from alternate corn and wheat, each divided by yields from alternate fallowing |                     |            |                          |
|---------------------------|---|---------------------|------------|--------------------------|
|                           | Alternate fallowing   | Continuous cropping | Rotation 1 | Alternate corn and wheat |
| 1                         | 2   | 3                   | 4          | 5                        |
| Showing normal yields:    |   |                     |            |                          |
| Moccasin.....             | 1   | 1.50                | 1.73       | 1.96                     |
| Belle Fourche.....        | 1   | 1.30                | 1.27       | 1.39                     |
| Sheridan.....             | 1   | 1.14                | 1.20       | 1.25                     |
| Mandan.....               | 1   | 1.20                | 1.40       | 1.59                     |
| Dickinson.....            | 1   | 1.14                | 1.46       | 1.59                     |
| Williston.....            | 1   | 1.27                | 1.42       | 1.56                     |
| Edgeley.....              | 1   | 1.74                | 2.15       | 2.44                     |
| Ardmore.....              | 1   | 1.41                | 1.69       | 1.89                     |
| Huntley.....              | 1   | 1.32                | 1.63       | 1.82                     |
| North Platte.....         | 1   | 1.20                | 1.35       | 1.54                     |
| Average.....              | 1   | 1.32                | 1.53       | 1.70                     |
| Showing subnormal yields: |   |                     |            |                          |
| Scotts Bluff.....         | 1   | .92                 | 1.41       | 1.72                     |
| Akron.....                | 1   | 1.59                | 1.70       | 2.01                     |
| Assiniboine.....          | 1   | 1.02                | 1.24       | 1.45                     |
| Hays.....                 | 1   | 1.35                | 2.14       | 2.25                     |
| Colby.....                | 1   | 1.25                | 1.49       | 1.65                     |
| Archer.....               | 1   | 1.26                | 1.21       | 1.35                     |
| Average.....              | 1   | 1.23                | 1.53       | 1.77                     |
| Grand average.....        | 1   | 1.29                | 1.53       | 1.72                     |



The returns for the normal group are shown in Figure 76 by solid lines, and those for the subnormal group by broken lines for the individual stations and also for the respective means. A third mean is that for all the 16 stations in the groups. There is a sufficiently close parallelism between these three means to warrant the use of any one of them in determining the relative effectiveness of the different systems, but when the subject is placed upon a quantitative basis and expressed in dollars of gross returns from a farm of definite size (600 acres) the upper mean of the 10 normal stations is the one that will provide the most reliable basis for calculations. Figure 77 is a graphic illustration of the percentages of mean returns as shown in Table 31. There is no segregation of normal and subnormal as in Figure 76, but its mean agrees with the third mean in Figure 76.

#### A SECOND WORKING HYPOTHESIS

The first working hypothesis having been shown to work within certain restricted limits, it has led to what will hereafter be called the second working hypothesis, some of the limitations and restrictions of which will now be considered.

Expressed in percentages of the gross returns from the system of alternate fallowing, which are the lowest, the following figures are obtained as shown in Table 32, as the average ratios for the 10 stations with normal yields: Alternate fallowing, 1; continuous cropping to wheat, 1.32; rotation 1, 1.53; and alternate corn and wheat, 1.70. These figures are very different from those of the first working hypothesis, but they are not inconsistent therewith, for they include some factors not included in the first, exclude some that were previously used, and treat other factors in a different way. The first working hypothesis was based upon yields per acre expressed in equivalents of bushels of wheat, whereas the calculations now to be considered are based upon gross returns per farm, calculated upon the prevailing prices for the whole United States for the 5-year period from 1921 to 1925, inclusive, for wheat, corn, and oats, respectively.

This hypothesis has to do with the crop-producing capacity of the soils of the Great Plains, as represented by the soils of the 16 field stations under consideration in the northern Great Plains, in reaction to the normal meteorological conditions of the region and the different systems of crop rotation and tillage methods applied to the respective crops. It also involves the actual and the relative market prices of the crops raised and the actual relative cost of the production of the different crops under the different systems. Furthermore, in the case of corn stover and all other roughage, it involves the transformation of these crops into livestock products that will sell at a price that will at least pay for the cost of conversion.

It was found that the value of the first working hypothesis consisted in its usefulness in developing a second working hypothesis that would make possible the establishment of the relative effectiveness of the different systems in producing gross returns from a farm of definite area. It is now apparent that the value of this second hypothesis depends largely upon its usefulness in developing a third hypothesis that will make possible the establishment of the relative efficiency of the different systems of crop rotation and tillage methods in producing net returns from the investment of capital and from labor performed. This is a vastly more com-

plex problem than the developing of the first and second hypotheses, for it involves many personal equations peculiar to each individual farm and farmer and his family. The number of combinations of ever-changing conditions, such as fluctuations in the actual and relative prices not only of farm crops but also of livestock products, taken in connection with the laws of supply and demand of both farm products and labor, are beyond calculation. It is therefore obvious that no single third hypothesis that will be applicable to any considerable number of the countless combinations of conditions can be developed.

It is believed, however, that the two hypotheses herein presented will be useful to the individual farmers who must meet and solve the problems that present themselves from day to day and from year to year on each farm.

As shown by Table 31 and Figure 76, the four systems of farming under consideration differ significantly in the amounts of gross returns. Using yields from alternate fallowing as a basis of comparison, and giving this system a value of 1, as has been done in Table 32, the yields from continuous cropping would be represented by 1.32; from rotation 1, 1.53; and from alternate corn and wheat, 1.70. Expressed in dollars, from a farm with 600 acres under cultivation, the respective returns would be \$6,397, \$8,330, \$9,556, and \$10,599. This is a difference of \$1,933 between the first and the second, \$1,226 between the second and the third, and \$1,043 between the third and the fourth. The difference between the first and the fourth is \$4,202; and between the second and the fourth \$2,269.

The amount of capital invested in the farm of 640 acres with its improvements, including the home of the owner, are the same for all four systems, and the taxes on them will be the same. The capital invested in implements and motive power (horses and tractors) will differ somewhat. It will be least for system 1, as only 300 acres of crop are seeded and harvested each year, instead of 600 acres under any of the other three systems. The difference in the cost of equipment necessary for the production of the crops under these four systems would not, however, vary in anything like the same proportion as the variation in the gross income. It is probable that instead of an increase in the cost of equipment being 70 per cent, as between system 1 and system 4 when the gross incomes are compared, it would be nearer 25 per cent.

If a farmer elects to adopt either the third or the fourth system, it will be necessary for him to increase his capital investment, for he must provide pasture for enough livestock to consume the roughage either from 200 acres of corn and 200 acres of oats if the third system is followed or from 300 acres of corn if the fourth system is chosen. He must also provide fences and shelter for his stock, and silos for a portion of his corn fodder, as well as some additional machinery. The kind of stock kept and the way in which the corn crop is handled will determine the nature and extent of these additional investments. In many parts of the Great Plains it is possible to rent unbroken prairie land, lying adjacent to improved farm land, for the taxes on the unbroken land. In such instances it would undoubtedly be better to rent than to buy such land, unless it can be bought at a price so low that the taxes and interest will not exceed the actual rental value of the land for pasture. Good grazing land in the northern Great Plains area can be rented for 10 to



15 cents per acre, and there is no region of comparable size in the 17 Western States that is as well suited to the production of as good quality of grass-fed beef as is found in western North Dakota and South Dakota and eastern Montana and Wyoming. This seems to indicate that grazing land in that region has a purchase value of only about \$2.50 per acre, which is much below the price at which it is now being held.

How much land is necessary for grazing the livestock required to consume all the coarse grains and roughage produced on 300 or 400 acres of land? This depends, of course, upon the character of the land and the kind of livestock kept, and these would be different for each farm. It would, therefore, be a waste of time to speculate upon this subject at this time.

The extra buildings necessary for sheltering the livestock and storing the roughage for feeding can be provided at a low cash outlay by utilizing prairie sod, poles, and wheat straw for shelters, and trench silos for storing corn fodder, at least until the enterprise reaches a stage when better buildings can be constructed from the profits of the business.

In planning and also in operating a diversified grain and livestock farm, it would be well to treat the crop production and the crop conversion or livestock sections as separate enterprises as far as practicable. That is to say, a farmer operating such a farm should be at any time in position to make a rough estimate of the relative profitableness of the two branches of the business. He should be able to make a fair estimate of what it cost him to produce the feed for the livestock, and he should credit this amount to the crop-production branch and charge it against the livestock branch. The gross cash returns from the crop-production branch would be represented by the receipts from the sale of wheat, and returns from the livestock branch would accrue from the sale of livestock products. These two items should be kept separate, but together they would constitute the gross income from the farm.

Expenditures should likewise be recorded in such form as to enable the farmer at any time to make a rough estimate as to the money income and outgo. The groupings of expenditures should include the following: Family living expenses; hired help; investment, interest, and taxes; equipment and repairs. An inventory of the livestock and equipment should also be kept.

The object sought is to enable the farmer to maintain a balance between his income and his outgo, or if he can not keep them in balance to know how much out of balance they are and why. In operating a combined grain and livestock farm he should also be able at any time to make a rough estimate as to whether the two branches of the business are in balance with each other. He must, in short, be constantly on the alert, watching for leaks and constantly striving to so coordinate all the activities of his organization as to yield the highest net returns either in cash, in the increased value of his investment, or in the general well-being of the organization as a whole. There must be a mutual give-and-take relationship between the family interests and the business interests of the farm.

After having adopted the system of rotation and tillage that seems best adapted to any particular farm, farmer, his family, and the local environment, including soil, climate, and marketing conditions, probably the factor most likely to necessitate frequent readjustments of the farming system is the fluctuation in the market prices of all farm products, both crop and

animal. Stable conditions of these factors can not be expected; an unstable equilibrium and the ability on the part of the farmer to make prompt readjustment to meet changing conditions is all that can be hoped for. It is believed that the facts recorded and the suggestions offered in these pages may be of some assistance to him.

#### THE AMERICAN FARM HOME AND THE LABOR PROBLEM

It is in the item of labor that the most complex farm problem occurs. If all the labor on the farm could be hired at fair wages just when it is needed it would be a very simple problem to estimate the relations between labor cost and gross income, but such conditions do not, and should not, exist on any farm. A farm should be primarily a home and secondarily a place where all the members of the farmer's family may find gainful employment for such portion of the time as circumstances may permit throughout the entire year. Hired help is also usually much more satisfactory when employed by the year. These considerations lift the problems of farming out of the manufacturing class and elevate them to a class by themselves. No two families are alike, and no one family remains the same for any considerable length of time.

Every farm home is a stage upon which there is a continuous performance. The entire range of dramatic performance is covered: Tragedy, comedy, farce, and burlesque follow one another in never-ending succession. The actors are the farmer, his wife and every other member of his family, and the farm help. They provide the brains, the brawn, and the inspiration for the entire farming enterprise; and the nature of the drama they enact influences every living thing on the farm and leaves its impress upon many inanimate objects.

It is hoped that the two working hypotheses may assist the stage carpenter in setting the stage, but the analysis has now reached a point showing that the hypotheses no longer work. The actors alone can determine what the play will be.

In attempting to estimate the cost of any given farm system, or the accomplishment of any object, one must have some standard of comparison in order to evaluate correctly the capital used, the labor performed, or the time consumed by any human being, animal, implement, or machine. Of course, there are no absolute standards with which any of these things can be compared and evaluated. All that can be hoped for is to make a few tentative comparisons that may serve to indicate some relative values.

This is not the proper place to sentimentalize farm life; our literature from Vergil down to Hamlin Garland is overflowing with it. No phase of farm life has been overlooked, from the best to the worst. It is, therefore, axiomatic that in no other business does sentiment exert so strong an influence as in farming. This fact can not be ignored in considering any of the problems of cost of production of farm products; nor should it be forgotten that human lives and human happiness can not be estimated in dollars and cents.

The sentiment that impels a large proportion of every civilized race to desire to own farms, to establish homes, and to rear families upon the farms has been one of the most powerful forces in civilization. It might well be called an instinct, for it is so closely associated with the instincts of self-preservation and the perpetuation of the species that it is difficult to disassociate it from them. Considered together, they constitute, for many people, the strongest incentives in life. Greater sacrifices have



been and will continue to be made in their defense than in defense of any other sentiment or instinct known to humanity.

### THE PROBLEM OF MARGINAL PRODUCTION

Leaving out of consideration, for the present, the farm products that are put on the market which have been produced at a loss to the producer, owing to the fact that either yields or prices, or both, are below the average, every year enormous quantities of all kinds of farm products are grown which the producer knows beforehand will yield him no direct profit. Producers of this class are mainly sentimentalists, although many of them would not recognize themselves as such. They include all sorts and conditions of men, from millionaire business men with country estates to the peasant farmers of Europe, Asia, and Africa, the latter eking out a miserable existence upon some small patch of land that they have inherited from their ancestors.

Then there is another class of producers who are not actuated by sentimental notions. Their motives are strictly utilitarian. They raise some particular crop, knowing that it will not in itself yield them a direct profit, but believing that it will indirectly benefit them. Perhaps winter wheat is as good an example as any of this practice. Over extensive regions in the United States the yields of winter wheat are not sufficient to insure a profit, but where the profitable products are corn, hay, and livestock, it has been found that by sowing winter wheat upon corn stubble and seeding down the land at the same time to clover and timothy, or some other grass, the farmers can get a small return from the winter wheat without interfering with the corn-grass rotation. If they did not raise winter wheat, they would receive no return whatever from the field during the year of its conversion into a meadow or pasture. An unprofitable winter-wheat crop is better than no crop.

In the northern Great Plains area it has been found profitable to introduce an unprofitable corn crop between two wheat crops, because the increased profits from the wheat crop following corn will more than compensate for the loss on the corn crop. Many other like instances could be cited to show that practically all staple crops have to meet the competition of large quantities of that particular commodity, or of substitutes for that commodity which are produced without any direct profit to the producer.

When manufacturers have to meet the competition of by-products from other factories, they usually find means of adjusting, evading, or overcoming such competition, through their organizations; but the farmers, who are not organized and who have no such control over either the production or the distribution of their products, are not likely to find any such remedy.

A manufacturer with his factory and a given quantity of raw material, and the necessary labor available, at the beginning of the year can make a very close estimate of just how much finished product he can turn out during the year, what it will cost him, and what he can sell it for in order to realize a given profit per unit of his product.

A farmer on the Great Plains, with his farm, his equipment, his seed, and his supply of labor and provisions for the year, can not at the beginning of the year estimate with any degree of probability within 100 per cent below the average or 250 per cent above what his output will be. His cost of production per unit of his product and the price at which he would have to sell it to realize

a given profit are equally uncertain. He must simply trust to luck and the weather as to the quantity of his product, and what he will receive per unit of such crops as he may happen to produce will depend upon world prices. (See Table 7, p. 75, Miscellaneous Circular No. 81.)

Table 33 has been prepared from the data heretofore presented in these pages and from statistics published in the Yearbook of Agriculture for 1926. It is so arranged as to show very plainly the conjoint effects of fluctuations of the price and the yields of wheat and oats. The average acre yields of wheat in the Great Plains for the 16-year period were 1.4 bushels higher than for the United States as a whole, and the acre value was \$1.28 higher. Although the yields of oats were also very slightly higher, 0.2 bushel, the acre values were 58 cents lower. This is due mainly to the fact that the price of wheat during the five years from 1916 to 1920, inclusive, was above the average for the 16-year period. The acre yields of wheat in the Great Plains area for that 5-year period were 13.8 bushels, which is 2.1 bushels below the average for the 16-year period. The price for oats was not as much higher during the war period as was that of wheat, and it extended over but four years, 1916 to 1919, and acre yields were 25.6 bushels, which is 6.7 bushels below the average for the 16-year period. As a result of these conditions the acre value of wheat on the Great Plains for the war period was \$24.29, which is \$5.52 above the 16-year average, whereas the acre value of oats for the same 5-year war period was \$16.06, which is only \$1.95 above the 16-year average. This is only one of many comparisons that may be made to show what queer pranks the fluctuations of prices and yields can play with profits in farming.

TABLE 33.—Price per bushel and acre yields and values of wheat, oats, and corn in the United States for the 16-year period 1909 to 1924, compared with wheat and oats at 16 field stations in the northern Great Plains area for the same years

| Year    | Wheat                           |              |               |              |               | Oats                            |              |               |              |               | Corn                            |                            |                            |
|---------|---------------------------------|--------------|---------------|--------------|---------------|---------------------------------|--------------|---------------|--------------|---------------|---------------------------------|----------------------------|----------------------------|
|         | Price per bushel, United States | Acre yields  |               | Acre values  |               | Price per bushel, United States | Acre yields  |               | Acre values  |               | Price per bushel, United States | Acre yields, United States | Acre values, United States |
|         |                                 | Great Plains | United States | Great Plains | United States |                                 | Great Plains | United States | Great Plains | United States |                                 |                            |                            |
| 1909    | 98.4                            | 23.4         | 15.8          | 23.03        | 15.57         | 40.6                            | 46.8         | 30.4          | 19.00        | 12.34         | 58.6                            | 26.1                       | 115.32                     |
| 1910    | 88.3                            | 11.4         | 13.9          | 10.07        | 12.28         | 34.4                            | 22.8         | 31.6          | 7.84         | 10.88         | 48.0                            | 27.7                       | 113.31                     |
| 1911    | 87.4                            | 5.2          | 12.5          | 4.54         | 10.96         | 45.0                            | 10.4         | 24.4          | 4.68         | 10.98         | 61.8                            | 23.9                       | 114.79                     |
| 1912    | 76.0                            | 13.8         | 15.9          | 10.94        | 12.12         | 31.9                            | 27.6         | 37.4          | 8.86         | 11.93         | 48.7                            | 29.2                       | 114.20                     |
| 1913    | 79.9                            | 14.8         | 15.2          | 11.83        | 12.16         | 39.2                            | 29.6         | 29.2          | 11.60        | 11.45         | 69.1                            | 23.1                       | 115.99                     |
| 1914    | 98.6                            | 17.9         | 16.6          | 17.65        | 16.41         | 43.8                            | 35.8         | 29.7          | 15.68        | 12.99         | 64.4                            | 25.8                       | 116.65                     |
| 1915    | 91.9                            | 32.8         | 17.0          | 30.14        | 15.58         | 36.1                            | 65.6         | 37.8          | 23.68        | 13.65         | 57.5                            | 28.2                       | 116.22                     |
| 1916    | 160.3                           | 20.7         | 12.2          | 33.18        | 19.50         | 52.4                            | 41.4         | 30.1          | 21.69        | 15.80         | 83.9                            | 24.4                       | 121.66                     |
| 1917    | 200.8                           | 8.8          | 14.1          | 17.67        | 28.35         | 66.6                            | 17.6         | 36.6          | 11.72        | 24.37         | 127.9                           | 26.3                       | 133.58                     |
| 1918    | 204.2                           | 13.3         | 15.6          | 27.16        | 31.80         | 70.9                            | 26.6         | 34.7          | 18.86        | 24.59         | 136.5                           | 24.2                       | 132.70                     |
| 1919    | 214.9                           | 7.7          | 12.8          | 16.55        | 27.48         | 70.4                            | 15.4         | 29.3          | 10.84        | 20.66         | 134.5                           | 28.9                       | 138.91                     |
| 1920    | 143.7                           | 18.7         | 13.6          | 26.87        | 19.58         | 46.2                            | 37.4         | 35.2          | 17.20        | 16.20         | 67.0                            | 31.5                       | 121.14                     |
| 1921    | 92.6                            | 11.9         | 12.8          | 11.01        | 11.85         | 30.2                            | 23.8         | 23.7          | 7.19         | 7.16          | 42.3                            | 29.6                       | 112.50                     |
| 1922    | 160.7                           | 18.4         | 13.9          | 18.53        | 14.02         | 39.4                            | 36.8         | 29.8          | 14.50        | 11.74         | 65.8                            | 28.3                       | 118.58                     |
| 1923    | 92.3                            | 15.1         | 13.4          | 13.94        | 12.34         | 41.4                            | 30.2         | 31.9          | 12.50        | 13.20         | 72.6                            | 29.3                       | 121.25                     |
| 1924    | 129.9                           | 21.0         | 16.5          | 27.28        | 21.38         | 47.7                            | 42.0         | 35.7          | 20.03        | 17.03         | 98.2                            | 22.9                       | 122.47                     |
| Average | 122.5                           | 15.9         | 14.5          | 18.77        | 17.59         | 46.0                            | 31.9         | 31.7          | 14.11        | 14.69         | 77.6                            | 26.8                       | 120.60                     |

It was found impracticable to include the yields of corn in the Great Plains area in this table, owing to the fact that the corn yields include the stover as well as the grain, while no comparable data are available for the United States as a whole.

Figure 78 is a graphic illustration of the data contained in Table 33. The upper portion shows the relations between the yields per acre, expressed in



bushels per acre, of wheat and oats in the Great Plains and the corresponding yields in the entire United States.

The lower portion illustrates the relative values per acre, as given in Table 33, for the United States and the Great Plains.

A careful study of Table 33 and Figure 78 will not only reveal the complexity of the problems of crop rotations but it will also assist in explaining some seeming anomalies.

Perhaps the most impressive feature of this table and its accompanying illustration is the remarkable similarity of the average results obtained at 16 northern Great Plains field stations and for the entire United States. These respective data were, of course, obtained independently of each other, and were never before brought together for comparison. The data for the 16 field stations are much more accurate than those for the whole United States, for they represent actual measurements of both the land and the crop, while those for the United States are what they purport to be, crop estimates. On the other hand, the enormously larger number of the estimates, as compared with the actual determinations, give the estimates a higher relative value than the actual determinations. The result of this comparison is to inspire greater confidence in both sets of figures.

#### INSURANCE AGAINST TOTAL FAILURE OF CROP

Many advocates of summer-fallowing lay great stress upon the insurance features of this practice. It is true that danger of complete crop failure when summer-fallowing is practiced is less than with continuous cropping, but it is far from being what can be called insurance. It is at best but a slight reduction of the hazard. A crop following summer-fallow may be as completely destroyed by hail, disease, or insect pests as one grown by continuous cropping or in rotations.

Table 34 has been prepared from the records of the Office of Dry Land Agriculture and shows what has been the experience in this respect in the Great Plains area for 149 crop years, with three crops and three systems, amounting to 1,341 independent determinations. It is self-explanatory. It shows the number of seasons when the yields of wheat, oats, and corn fall below the point of possible profit in their production, at each station for each of the three crops, as grown under each of the three systems, (1) continuous cropping, (2) alternate fallowing, and (3) in rotation 1.

If the percentages of practical crop failures are subtracted from 100 in each instance, it shows that under continuous cropping the crop yield above the standards set for each crop was 70 per cent for wheat and oats and 94 per cent for corn; for alternate fallowing it was 89 per cent for wheat and oats and 96 per cent for corn; and for rotation 1 it was 77 per cent for wheat, 75 per cent for oats, and 94 per cent for corn.

For rotation 1 the average of the three crops would be  $77 + 75 + 94 \div 3 = 82$  per cent, and for alternate wheat and corn it would be  $77 + 94 \div 2 = 86$  per cent.

TABLE 34.—Number of years in which wheat yielded less than 5 bushels, oats less than 10 bushels, and corn less than 1,000 pounds total weight at 16 field stations in the northern Great Plains area, for each of three systems of farming, with percentages for each station, crop, and system

| Field station and comparison factors | Number of years in which wheat yielded less than 5 bushels under— |                  |            | Number of years in which oats yielded less than 10 bushels under— |                  |            | Number of years in which corn yielded less than 1,000 pounds under— |                  |            | Years at each station |
|--------------------------------------|---|------------------|------------|---|------------------|------------|---|------------------|------------|-----------------------|
|                                      | Continuous cropping   | Alternate fallow | Rotation 1 | Continuous cropping   | Alternate fallow | Rotation 1 | Continuous cropping   | Alternate fallow | Rotation 1 |                       |
| Moccasin:                            |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 3   | 2                | 2          | 3   | 2                | 3          | 0   | 0                | 0          | 18                    |
| Percentage.....                      | 17  | 11               | 11         | 17  | 11               | 17         | 0   | 0                | 0          |                       |
| Belle Fourche:                       |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 6   | 2                | 5          | 5   | 2                | 4          | 2   | 1                | 2          | 18                    |
| Percentage.....                      | 33  | 11               | 28         | 28  | 11               | 22         | 11  | 6                | 11         |                       |
| Sheridan:                            |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 2   | 0                | 2          | 2   | 1                | 2          | 1   | 1                | 1          | 9                     |
| Percentage.....                      | 22  | 0                | 22         | 22  | 11               | 22         | 11  | 11               | 11         |                       |
| Mandan:                              |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 4   | 3                | 3          | 4   | 0                | 3          | 0   | 0                | 0          | 12                    |
| Percentage.....                      | 33  | 25               | 25         | 33  | 0                | 25         | 0   | 0                | 0          |                       |
| Dickinson:                           |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 6   | 1                | 3          | 7   | 2                | 4          | 1   | 1                | 1          | 19                    |
| Percentage.....                      | 32  | 5                | 16         | 37  | 11               | 21         | 5   | 5                | 5          |                       |
| Williston:                           |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 4   | 1                | 3          | 5   | 1                | 4          | 0   | 0                | 0          | 11                    |
| Percentage.....                      | 36  | 8                | 27         | 45  | 9                | 36         | 0   | 0                | 0          |                       |
| Edgeley:                             |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 5   | 1                | 4          | 4   | 1                | 3          | 0   | 0                | 0          | 16                    |
| Percentage.....                      | 31  | 6                | 25         | 25  | 6                | 19         | 0   | 0                | 0          |                       |
| Ardmore:                             |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 5   | 2                | 3          | 4   | 3                | 4          | 2   | 1                | 1          | 13                    |
| Percentage.....                      | 38  | 15               | 23         | 31  | 23               | 31         | 15  | 8                | 8          |                       |
| Huntley:                             |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 3   | 2                | 3          | 4   | 2                | 3          | 2   | 1                | 3          | 14                    |
| Percentage.....                      | 21  | 14               | 21         | 29  | 14               | 21         | 14  | 7                | 21         |                       |
| North Platte:                        |   |                  |            |   |                  |            |   |                  |            |                       |
| Years.....                           | 6   | 2                | 6          | 7   | 2                | 7          | 1   | 1                | 1          | 19                    |
| Percentage.....                      | 32  | 10               | 32         | 37  | 10               | 37         | 5   | 5                | 5          |                       |
| Total years.....                     | 44  | 16               | 34         | 45  | 16               | 37         | 9   | 6                | 9          | 149                   |
| Average percentage.....              | 30  | 11               | 23         | 30  | 11               | 25         | 6   | 4                | 6          |                       |

It is therefore obvious that the chance of obtaining an average yield above the standard for alternate wheat and summer-fallowing would be 89 per cent; whereas for the three crops, wheat, oats, and corn, in rotation 1 it would be 82 per cent; a ratio of  $89 \div 82$  gives 1.09 per cent in favor of alternate fallowing; and with alternate wheat and corn the ratio would be  $89 \div 86 = 1.03$  per cent. As an offset against these greater hazards of 9 and 3 per cent, respectively, there are the increased gross returns of 53 and 70 per cent, respectively. (See Table 32.) Moreover, the additional livestock which would be owned by the farmer under either of the rotation systems would in itself be a much better safeguard against total failure of crops than summer-fallowing. Sufficient winter feed for the livestock should be carried over from year to year, so as to insure an income from that source sufficient to feed the farmer's family even in years of total failure of crops.

It is therefore obvious that the summer-fallowing system as an insurance against total loss of crops is a myth, while crop rotation and livestock are realities.

It is rather difficult to understand why anyone should advocate or practice summer-fallowing for wheat in a region where corn can be grown as successfully as it can be in the northern Great Plains area. Of course,



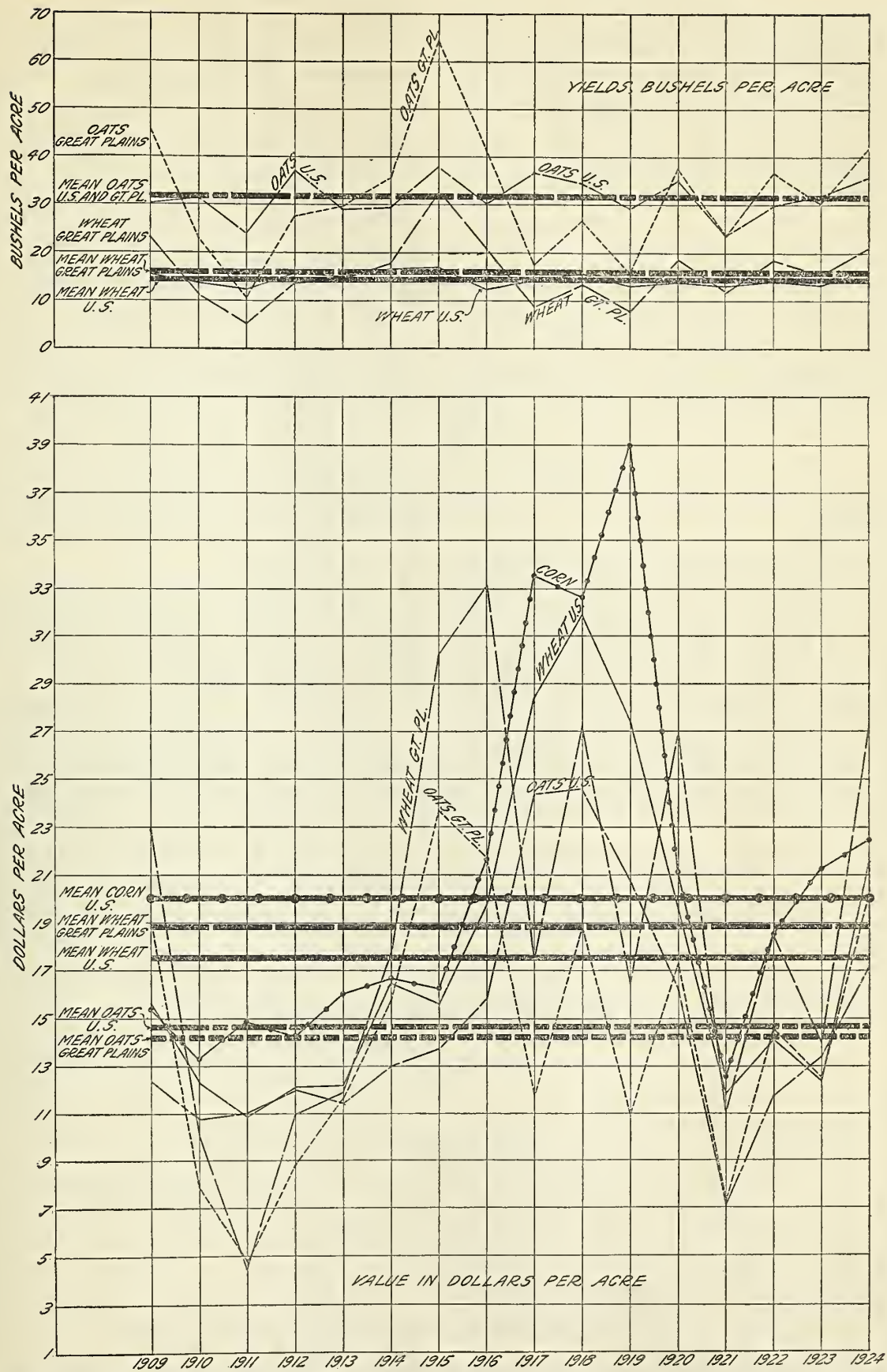


FIGURE 78.—Diagram illustrating Table 33, giving the acre yields (above) and acre value (below) of wheat and oats for the United States and for 16 northern Great Plains field stations. The acre value of corn is also given for the United States but not for the Great Plains

the growing of corn in this region involves also the keeping of sufficient livestock to convert all the roughage and the corn grain into animal products of some kind. But that ought not to be an obstacle in the way of the agricultural development of the Great Plains. It is true that it requires more capital to finance a grain and stock farm than is required for a 1-crop system of grain raising. But, on the other hand, both the cash capital and the managerial ability invested in a grain and livestock farm are much more profitably and continuously employed. It is a much safer business, and labor is more economically and continuously employed.

Possibly sentiment may have something to do with the raising of wheat on summer-fallowed land. Any farmer likes to raise big crops. He gets much more satisfaction out of watching a 30-bushel crop of wheat grow than to watch a 20-bushel crop, but under a summer-fallow system he has only half as many acres of crop and the 30-bushel crop may cost, and probably does cost, more per bushel to raise than the 20-bushel crop.

#### COMMENTS AND SUGGESTIONS CONCERNING CROP ROTATIONS AND TILLAGE METHODS IN THE GREAT PLAINS AREA

The men who have conducted these investigations had no pet theories which were to be demonstrated. If they had proved nothing, they would not necessarily have failed. They have certainly established certain facts and certain relations between these facts that must be recognized in any intelligent study of some very important farm problems. These facts are hereby made available to the general public, and the preceding analysis and discussion of these facts have demonstrated some of the complexities of the problems involved in the present agricultural situation. The statistical data which follow will add to the complexity of the problems, but they also furnish additional material for studying them.

The writer is fully aware of the fact that his treatment of the material may not be the best that might be developed. Most readers will doubtless agree with him upon this point. The inadequacy of the treatment of the material by the writer therefore requires no further discussion. What is needed is better treatment. It is a subject that lies close to the foundation of our American civilization and is worthy of consideration by the best minds of the country. It is the hope of the writer that it may receive such consideration.

Crop rotation is an essential feature of the agricultural development of the Great Plains if the American farm home is to be preserved in that area.

Corn is the most important crop in the rotation in the northern Great Plains. It is also one of the most difficult to correctly evaluate. This is due mainly to two causes. It is very erratic and discordant in its reaction to changes in soil and climatic conditions when compared with wheat and oats. It must be fed on the farm where it is produced. This introduces the factor of its profitable conversion into animal products. These investigations have demonstrated its place and its value in the rotation. Its profitable conversion is a problem for the study of practical stockmen and investigators of animal industry.

The problems of tillage and the preparation of the seed bed are so dependent upon local and seasonal soil and climatic conditions that they must be left

largely to the individual practical farmers for ultimate solution.

It should be borne constantly in mind that one of the most important objects sought by the rotation of crops and by tillage methods is the prevention of the growth of weeds. Whatever system of farming is adopted, its success or failure will depend largely upon how efficiently it prevents the loss of soil water by the growth of weeds. This is a local and seasonal problem that must be met and solved by the farmer under conditions existing at any particular time and place. In fact, the entire problem of the tillage of row crops is usually the problem of weed destruction. Any cultivation of row crops in excess of that necessary to prevent weed growth is usually a waste of time and labor. The time and method of preparing the seed bed for all crops is also largely a matter of the control of weed growth.

Although the adoption of a rotation system which includes a corn crop is indicated as the most profitable by the results of these investigations, it is obvious that such a system can not, for various reasons, be adopted by all farmers in the Great Plains area. The knowledge of the relations of the different systems of farming to one another and to the gross returns that can reasonably be expected from each, however, should be of value to anyone interested in the agricultural development of the Great Plains area.

The agricultural problems of the United States are becoming recognized as among the gravest problems now before the American people. Their solution will require the combined efforts of the most able sociologists, economists, financiers, and statesmen, as well as that of the agriculturists.

It seems impossible that the present disparity between the prosperity of the people engaged in agriculture and those engaged in manufactures and commerce can continue for any great length of time. How they are to be brought into equilibrium is a problem that does not come within the scope of these investigations. There are, however, certain probabilities that, for the purpose of these investigations, may be considered as certainties. Among these are the following: The United States of America will have a permanent agriculture for many generations to come. The agriculture of the Great Plains will increase in national importance as time goes on. The agriculture of the future must rest upon a far firmer scientific basis than that of the past or the present. Pertinent facts are essential as a basis for scientific reasoning. These pages contain a record of facts pertinent to the agricultural development of the Great Plains such as can not be found elsewhere. This record is becoming more valuable every year that these investigations are continued. Before facts can be utilized they must be interpreted and analyzed. Methods of interpretation and analysis must be developed from which generalizations can be made. It is hoped that the generalizations herein presented will be of some value. It is still more confidently believed that the methods of interpretation and analysis used will prove of great value, even though it be only to show how the facts ought not to be used. Of the value of the facts presented there can be no reasonable doubt. It is hoped that these facts will be fully utilized by other investigators, and that both the methods and the generalizations of the writer will be frankly and freely criticized. The problems of crop rotation are much more complex than is generally realized, and but little scientific work has been done upon them.



# OUTLINES OF ROTATIONS AND TILLAGE METHODS USED BY THE OFFICE OF DRY-LAND AGRICULTURE IN ITS INVESTIGATIONS ON THE GREAT PLAINS

## EXPLANATION OF SYMBOLS AND TERMS USED IN DESIGNATING TILLAGE METHODS

The outlines of rotations and tillage methods given on pages 32 to 43 include all the different rotations and tillage methods that are being studied in this series of investigations at all of the field stations of the Office of Dry Land Agriculture in the Great Plains area.

Rotations numbered from 1 to 620 are outlined in numerical sequence (pages 32 to 41). Instances are numerous, however, where there are breaks in the continuity of the numbers. These missing numbers have not yet been assigned to rotations, and therefore will not be found in any of the tables in this circular.

Following the outline of the rotations (page 41) are the outlines of 12 regular continuously cropped plots, arranged in discontinuous alphabetical sequence. These are used more or less at all the field stations. They are designated as A, B, E, F, G, T, U, V, W, X, Y, and Z.

Next (page 41) are the outlines of the various methods of summer fallowing. These are used more or less at all the stations. They are seven in number, designated as C or D, H or I, J or K, L or M, N or O, P or Q, and R or S.

Next (page 41) are the outlines of a special series of delayed seeding of spring wheat at Mandan, N. Dak. They are designated as DS-A, DS-B, DS-C or D, DS-E, and DS-F.

Next (page 41) are the outlines of a special series of six methods of seeding winter wheat at Archer. These are designated as 1 or 5, 2 or 6, 3 or 7, 4 or 8, 9 or 11, and 10 or 12.

Next (page 41) are the outlines of a special series of 16 deep-tillage experiments with the Spalding deep-tillage machine and with blasting at Akron. They are designated as DT-L, J or M, M or J, DT-K, D or N, B or O, C or P, A or Q, DT-F, H or E, E or H, DT-G, N or D, P or C, O or B, and Q or A.

Deep-tillage experiments wherein dynamite was used, similar to those at Akron, Colo., were conducted at Moccasin, Mont., from 1913 to 1917 and at Ardmore, S. Dak., from 1915 to 1920. The results to 1916 at both stations were published in the Journal of Agricultural Research, volume 14, No. 11; and the results at Ardmore were published in full in United States Department of Agriculture Technical Bulletin No. 17.

Next (page 42) are the outlines of a special series of 12 seed-bed preparations of winter-wheat stubble for winter wheat at Hays, Kans. These are designated as SH-1 to SH-12.

Next (page 42) are the outlines of a special series of 36 seed-bed experiments conducted at Garden City, Kans. These are designated as \*1 to \*36.

Next (page 42) are the outlines of a special series of five cultural methods with milo at Woodward and Tucumcari, and with kafir at Lawton. These are designated as CM-1 to CM-5.

Next (page 42) are the outlines of a special series of seven listing methods with milo at Dalhart (south field). These are designated as LM-1 to LM-7.

Next (page 42) are the outlines of a special series of eight listing methods at Dalhart, Tucumcari, Lawton, and Big Spring, using milo in the north field at Dalhart, at Tucumcari in 1916, kafir at Lawton, and milo at

Big Spring. These are designated as LM-R, LM-S, LM-T, LM-U, LM-V, LM-W, LM-X, and LM-Y.

Next (page 43) are the outlines of a special series of seed-bed plots with winter wheat at Lawton, Okla. They are designated as SL-1 to SL-10.

Next (page 43) are the outlines of a special series of nine cultural methods with cotton at Big Spring. These are designated as Cot-1 to Cot-9.

Next (page 43) are the outlines of check plots at North Platte, Colby, Woodward, Tucumcari, Lawton, and Big Spring.

## THE TERM "DISKED" DEFINED

In the following pages, "disked" is used as a generic term for the cultivation practices employed in preparing a seed bed without plowing. These practices generally have been double-disking with the disk harrow and following with the spike-tooth harrow when the condition of the surface warranted the use of this implement. Other implements designed to give a shallow surface cultivation have been used at times at some of the stations.

At Moccasin the spring-tooth harrow was used from 1922 to 1926, except that in preparation for spring-sown grains in 1926 a shovel cultivator was used.

An Acme harrow was used at Dickinson in 1911.

A spring-tooth harrow was used at Belle Fourche in 1920 and from 1922 to 1925, and a duck-foot cultivator was used in 1926.

A spring-tooth harrow was used at Scotts Bluff in 1917, and at Akron in 1926.

A duck-foot cultivator was used at Archer in 1924, 1925, and 1926.

At Hays there has been little use of the disk in preparation for spring-sown grains since 1914. A shovel cultivator was substituted as a protection against soil blowing. In preparing for the winter-wheat crops of 1925 and 1926, the condition of the soil following cultivated crops was such that no further cultivation was given.

At Woodward a spring-tooth harrow was used from 1915 to 1918 and both a disk and a spring-tooth harrow in 1919 and 1920.

All of the above-mentioned practices have been designated as "disked" in the outlines and tables which follow, in contradistinction to the plowed land which may or may not have been disked after plowing. A "disked fallow" or a "duck-foot fallow" is a fallow which has not been plowed but has been kept free from weeds by the use of the disk, duck-foot, or other cultivator.

## THE TERM "LISTED" DEFINED

The term "listed" has been used in describing the preparation of the seed bed for small grains. The lister is a double-moldboard plow with a subsoil and a seeding and covering attachment used for planting corn and sorghums in the bottom of shallow trenches between intervening ridges. When the lister is used for seed-bed preparation for small grains the seeding attachment is disconnected and the implement is used for throwing the soil up into ridges with intervening trenches. This is usually done in the fall for spring seeding. These intervening ridges and trenches catch and hold the snow during the winter and reduce the run-off of water from rains or melting snow. They also have a tendency to reduce soil blowing. In the spring these ridges are either "busted" by running the lister through



their centers and throwing the soil back into the trenches or they are worked down with a disk or some other type of cultivator. The lister may also be used in the same general way in the spring for spring-sown crops or for summer-fallow, or in the fall for preparing the seed bed for winter wheat or rye.

A "listed fallow" is a summer-fallow on which the lister has been substituted for the plow and upon which other implements, such as the disk harrow, spring-tooth harrow, duck-foot, or other type of cultivator may or may not be used after the lister.

#### THE TERMS "FALLOW" AND "FALLOWED" DEFINED

The term "fallow" is used in the column headed "Previous crop" in Tables 51 to 73 to indicate that no crop was grown during the previous year, but that the land was under clean fallow, unless otherwise noted in the outlines. The term "fallowed" is used in the column headed "Tillage methods" to indicate that the land had been fallowed the previous year. For both fall-sown and spring-sown crops a good seed bed was prepared just before seeding.

#### NUMERICAL LIST OF CROP ROTATIONS

##### ROTATION 1

Wheat on disked corn ground.  
Oats on early fall plowing.  
Corn on early fall plowing.

##### ROTATION 2

Wheat on spring plowing.  
Oats on spring plowing.  
Corn on spring plowing.

##### ROTATION 3

Wheat on fall plowing.  
Oats on early fall plowing.  
Corn on early fall plowing.

##### ROTATION 4

Oats on disked corn ground.  
Wheat on early fall plowing.  
Corn on early fall plowing.

##### ROTATION 5

Wheat on summer-fallow.  
Oats on early fall plowing.  
Summer-fallow.

##### ROTATION 6

Barley on disked corn ground.  
Oats on early fall plowing.  
Corn on early fall plowing.

##### ROTATION 7

Oats on spring plowing.  
Barley on spring plowing.  
Corn on spring plowing.

##### ROTATION 8

Oats on summer-fallow.  
Wheat on early fall plowing.  
Summer-fallow.

##### ROTATION 9

Oats on spring plowing.  
Wheat on spring plowing.  
Corn on spring plowing.

##### ROTATION 10

Oats on sod broken the previous summer and backset if necessary.  
Corn on spring plowing.  
Wheat on disked corn ground and seeded to bromegrass.  
Bromegrass meadow.  
Bromegrass meadow broken up in summer or early fall.

Bromegrass changed to crested wheatgrass at Moccasin in 1923.

##### ROTATION 11

Oats on sod broken the previous summer.  
Corn on spring plowing.  
Wheat on disked corn ground.  
Clover sown in spring without nurse crop, on fall plowing (red clover).  
Clover meadow, broken up in summer or early fall.

Red clover changed to sweetclover at Scotts Bluff in 1919, at Ardmore in 1920, at Dickinson in 1922, and at Belle Fourche and Moccasin in 1923.

##### ROTATION 12

Bromegrass meadow.  
Flax on bromegrass sod broken just before seeding.  
Oats on fall plowing.  
Corn on spring plowing.  
Wheat on disked corn ground and seeded to bromegrass.  
Bromegrass meadow.

Bromegrass changed to slender wheatgrass at Willis in 1915 and to crested wheatgrass at Moccasin in 1923.

Sod broken in the fall for flax at Dickinson from 1914 to 1918, inclusive, and at Belle Fourche and Ardmore in 1917.

##### ROTATION 13

Wheat on disked corn ground.  
Oats on spring plowing.  
Corn on spring plowing.

##### ROTATION 14

Wheat on disked corn ground.  
Winter rye on fall plowing.  
Oats on rye turned under.  
Corn on spring plowing.

##### ROTATION 15

Oats on disked corn ground.  
Winter rye on fall plowing.  
Wheat on rye turned under.  
Corn on spring plowing.

##### ROTATION 16

Wheat on disked corn ground.  
Peas on fall plowing.  
Oats on peas turned under.  
Corn on spring plowing.

##### ROTATION 17

Oats on disked corn ground.  
Peas on fall plowing.  
Wheat on peas turned under.  
Corn on spring plowing.

##### ROTATION 18

Oats on disked corn ground.  
Summer-fallow.  
Wheat on summer-fallow.  
Corn on spring plowing.

##### ROTATION 19

Wheat on disked corn ground.  
Summer-fallow.  
Oats on summer-fallow.  
Corn on spring plowing.

##### ROTATION 20

Oats on disked corn ground.  
Winter rye on early fall plowing.  
Winter wheat on rye turned under.  
Corn on early fall plowing.

##### ROTATION 22

Oats on disked kafir ground.  
Winter rye on early fall plowing.  
Winter wheat on rye turned under.  
Kafir on early fall plowing.

##### ROTATION 24

Oats on disked milo ground.  
Winter rye on early fall plowing.  
Winter wheat on rye turned under.  
Milo on early fall plowing.

Sorgo substituted for milo at Akron beginning with 1922.

##### ROTATION 26

Winter wheat on disked corn ground.  
Winter rye on early fall plowing.  
Oats on rye turned under.  
Corn on early fall plowing.

##### ROTATION 28

Oats on disked corn ground.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Corn on early fall plowing.

##### ROTATION 29

Oats on disked corn ground.  
Winter rye on early fall plowing.  
Wheat on rye turned under.  
Corn on early fall plowing.

##### ROTATION 30

Oats on disked corn ground.  
Peas on early fall plowing.  
Wheat on peas turned under.  
Corn on early fall plowing.

##### ROTATION 31

Wheat on disked corn ground, seeded to sweetclover.  
Sweetclover turned under.  
Oats on sweetclover turned under.  
Corn on spring plowing.

##### ROTATION 32

Oats on disked corn ground, seeded to sweetclover.  
Sweetclover turned under.  
Wheat on sweetclover turned under.  
Corn on spring plowing.

##### ROTATION 33

Wheat on disked sorgo ground, seeded to sweetclover.  
Sweetclover turned under.  
Oats on sweetclover turned under.  
Sorgo on spring plowing.

##### ROTATION 34

Oats on disked sorgo ground, seeded to sweetclover.  
Sweetclover turned under.  
Wheat on sweetclover turned under.  
Sorgo on spring plowing.

##### ROTATION 35

Winter rye and sweetclover.  
Sweetclover for hay or seed, or both.  
Milo on spring plowing.  
Summer-fallow.

In 1915 winter rye was substituted for sweetclover at Woodward, in 1917 sweetclover was substituted for winter rye, and in 1918 the rotation was changed to a 3-year period by omitting the milo.



## Rotation 35 at Archer:

Corn on unplowed wheat stubble cultivated with duck-foot cultivator in spring.  
Wheat on unplowed corn stubble cultivated with duck-foot cultivator in spring.

## ROTATION 36

Sweetclover for first-year crop.  
Sweetclover for second-year crop.  
Milo on spring plowing.  
Summer-fallow. Sorgo planted August 1 and sweetclover sown in fall.

Rotation 36 was changed in 1918 to the following:

Sweetclover for first-year crop.  
Sweetclover for second-year crop.  
Summer-fallow. Sorgo planted August 1 and sweetclover sown in fall.

## ROTATION 37

Winter wheat on disked potato land.  
Potatoes on fall plowing.

## ROTATION 38

Summer-fallow spring plowed, with manure.  
Winter wheat on summer-fallow.

## ROTATION 39

Summer-fallow spring plowed, with manure.  
Wheat on summer-fallow.

## ROTATION 40

Corn on fall plowing.  
Oats on disked corn ground.

Corn in rotation 40 at Dickinson was on spring plowing.

## Rotation 40 at North Platte:

Summer-fallow.  
Sorgo on summer-fallow.

## ROTATION 41

Oats on sod broken previous summer and backset if necessary.  
Corn on spring plowing.  
Wheat on disked corn ground, seeded to bromegrass.  
Bromegrass meadow.  
Bromegrass meadow.  
Bromegrass meadow, broken in summer or early fall.

Bromegrass in rotation 41 changed to crested wheat-grass at Moccasin in 1923.  
Oats changed to flax at Mandan in 1922.

## ROTATION 42

Oats on sod broken previous summer.  
Corn on spring plowing.  
Wheat on disked corn ground.  
Alfalfa on fall-plowed land, sown in spring without nurse crop.  
Alfalfa meadow.  
Alfalfa meadow broken up in summer or early fall.

Oats in rotation 42 at Mandan changed to flax in 1922.

## ROTATION 43

Wheat on fall plowing.  
Oats on land manured and fall plowed.  
Corn on fall plowing.

## ROTATION 44

Wheat on disked corn ground.  
Sorgo on land manured and spring plowed.  
Corn on fall plowing.

## ROTATION 45

Winter rye on disked corn ground.  
Oats on rye turned under.  
Corn on early fall plowing.

## ROTATION 46

Peas on fall plowing.  
Oats on peas turned under.  
Corn on early fall plowing.

## ROTATION 47

Sorgo on land manured and spring plowed.  
Oats on spring plowing.  
Corn on early fall plowing.

## ROTATION 48

Wheat on spring plowing.  
Oats on spring plowing.  
Sorgo on spring plowing.

## ROTATION 49

Corn on fall plowing.  
Wheat on disked corn ground.  
Corn on spring plowing at Dickinson.

## ROTATION 50

Summer-fallow.  
Oats on summer-fallow.  
Corn on spring plowing.

## ROTATION 51

Barley on disked corn ground.  
Winter rye on early fall plowing.  
Winter wheat on rye turned under.  
Corn on spring plowing.

## ROTATION 52

Winter wheat on disked corn ground.  
Winter rye on early fall plowing.  
Barley on rye turned under.  
Corn on spring plowing.

Winter wheat changed to spring wheat at Assiniboine after 1924.

## ROTATION 53

Winter wheat on disked corn ground.  
Peas on early fall plowing.  
Barley on peas turned under.  
Corn on spring plowing.

Winter wheat changed to spring wheat at Assiniboine after 1924.

## ROTATION 54

Barley on disked kafir ground.  
Winter rye on fall plowing.  
Winter wheat on rye turned under.  
Kafir on spring plowing.

## ROTATION 55

Barley on disked kafir ground.  
Peas on fall plowing.  
Winter wheat on peas turned under.  
Kafir on spring plowing.

## ROTATION 56

Barley on disked corn ground.  
Summer fallow.  
Winter wheat on summer-fallow.  
Corn on spring plowing.

## ROTATION 57

Oats on disked sorgo ground.  
Wheat on early fall plowing.  
Sorgo on early fall plowing.

Wheat changed to winter rye at Dalhart after 1919.

## ROTATION 58

Oats on disked cowpea ground.  
Wheat on fall plowing.  
Cowpeas on fall plowing.

Wheat changed to winter rye after 1919.

## ROTATION 59

Corn on fall plowing.  
Barley on disked corn ground.

## ROTATION 60

Oats on spring plowing.  
Peas on early fall plowing.  
Wheat on peas turned under.

## ROTATION 61

Oats on spring plowing.  
Corn on land manured and spring plowed.  
Wheat on early fall plowing.

## ROTATION 62

Oats on spring plowing.  
Winter rye on early fall plowing.  
Wheat on rye turned under.

## ROTATION 63

Oats on early fall plowing.  
Winter rye on early fall plowing.  
Winter wheat on rye turned under.

## ROTATION 64

Oats on disked corn ground.  
Wheat on spring plowing.  
Corn on land manured and spring plowed.

## ROTATION 65

Corn on land manured and spring plowed.  
Wheat on disked corn ground.  
Oats on early fall plowing.

## ROTATION 66

Corn on spring plowing.  
Wheat on disked corn ground (manure applied in fall previous to seeding).  
Oats on fall plowing.

## ROTATION 67

Corn on spring plowing.  
Wheat on disked corn ground.  
Oats on land manured and fall plowed.

## ROTATION 68

Oats on summer-fallow.  
Corn on spring plowing.  
Wheat on disked corn ground.  
Summer-fallow manured before first plowing.

## ROTATION 69

Wheat on summer-fallow.  
Corn on spring plowing.  
Oats on disked corn ground.  
Summer-fallow manured before first plowing.

## ROTATION 70

Oats on disked potato land.  
Summer-fallow manured before first plowing.  
Wheat on summer-fallow.  
Potatoes on spring plowing.

## ROTATION 71

Wheat on disked potato land.  
Summer-fallow manured before first plowing.  
Oats on summer-fallow.

Potatoes on spring plowing.

## ROTATION 72

Oats on disked potato land.  
Potatoes on fall plowing.

## ROTATION 73

Corn on spring plowing.  
Barley on disked corn ground.

## ROTATION 74

Oats on summer-fallow.  
Corn on early fall plowing.  
Winter wheat on disked corn ground.  
Summer-fallow.

## ROTATION 82

Kafir on rye turned under.  
Cowpeas on spring plowing.  
Winter rye on fall plowing, turned under.

## ROTATION 83

Kafir on Sudan grass turned under.  
Cowpeas on spring plowing.  
Sudan grass on fall plowing, turned under.

Kafir listed and Sudan grass on spring plowing and harvested at Garden City.

Sudan grass harvested after 1921 and all on spring plowing beginning with 1923 at Dalhart.

Sudan grass harvested and all spring listed after 1920 at Tucumcari.

## ROTATION 84

Cowpeas on spring plowing.  
Winter rye on fall plowing.  
Sudan grass on spring plowing.

Disked for winter rye and fall plowed for Sudan grass at Woodward after 1919.

## ROTATION 85

Barley on disked flax stubble.  
Summer-fallow.  
Winter wheat on fallow.  
Corn on fall plowing.  
Flax on spring plowing.

## ROTATION 86

Barley on disked flax stubble.  
Corn on spring plowing.  
Wheat on disked corn ground.  
Corn on fall plowing.  
Flax on spring plowing.

## ROTATION 87

Cowpeas on spring plowing.  
Winter rye on fall plowing.  
Sudan grass on land manured and spring plowed.

Not manured at Dalhart until 1920.

Disked for winter rye and fall plowed for Sudan grass at Woodward beginning with 1920.

## ROTATION 88

Cowpeas on spring plowing.  
Winter rye on fall plowing.  
Corn on spring plowing.

Disked for winter rye and fall plowed for corn at Woodward beginning with 1920.

## ROTATION 89

Cowpeas on spring plowing.  
Winter rye on fall plowing.  
Corn on land manured and spring plowed.

Disked for rye and fall plowed for corn at Woodward beginning with 1920.

## ROTATION 91

Oats on disked corn ground.  
Peas on early fall plowing.  
Winter wheat on peas turned under.  
Corn on early fall plowing.

## ROTATION 92

Barley on disked corn ground.  
Peas on early fall plowing.  
Winter wheat on peas turned under.  
Corn on spring plowing.

## ROTATION 93

Oats on disked kafir ground.  
Peas on early fall plowing.  
Winter wheat on peas turned under.  
Kafir on early fall plowing.

## ROTATION 95

Oats on disked milo ground.  
Peas on early fall plowing.  
Winter wheat on peas turned under.  
Milo on early fall plowing.

Sorgo substituted for milo at Akron beginning with 1922.

## ROTATION 97

Winter wheat on disked corn ground.  
Peas on early fall plowing.  
Oats on peas turned under.  
Corn on early fall plowing.

At Akron the corn was on spring plowing from 1903 to 1912.

## ROTATION 101

Summer-fallow.  
Winter wheat on summer-fallow.  
Oats on fall plowing.

## ROTATION 102

Corn on fall plowing.  
Winter wheat on disked corn stubble.  
Oats on fall plowing.

## ROTATION 103

Corn on fall plowing.  
Winter wheat on disked corn ground, top-dressed with manure.  
Oats on fall plowing.

## ROTATION 104

Corn on fall plowing.  
Oats on disked corn ground.  
Winter wheat on disking and fall plowing.

## ROTATION 105

Potatoes on fall plowing.  
Oats on disked potato land.  
Winter wheat on disked oat stubble.

## ROTATION 106

Potatoes on disked corn ground.  
Oats on disked potato land.  
Corn on fall plowing.

## ROTATION 107

Potatoes on summer-fallow.  
Oats on disked potato land.  
Summer-fallow.

## ROTATION 108

Potatoes on fall plowing.  
Spring wheat on disked potato land.  
Oats on disked wheat stubble.

## ROTATION 109

Potatoes on fall plowing.  
Winter wheat on disked potato land.  
Oats on disked wheat stubble.

## ROTATION 110

Winter wheat on disked corn ground.  
Corn on fall plowing.

## ROTATION 111

Winter wheat on disked corn ground.  
Corn on fall plowing, half stand.

## ROTATION 112

Winter wheat on disked corn ground.  
Corn on fall plowing.

## ROTATION 113

Winter wheat on disked corn ground.  
Corn listed on wheat stubble.

## ROTATION 114

Winter wheat on disked corn ground.  
Winter rye on early fall plowing.  
Oats on rye turned under.  
Corn on spring plowing.

Rotation 114 at North Platte:

Weedy summer-fallow.  
Winter wheat on weedy summer-fallow.

## ROTATION 115

Oats on disked corn ground.  
Winter rye on early fall plowing.

Winter wheat on rye turned under.  
Corn on spring plowing.

Rotation 115-A at North Platte was continuously fallowed for 10 years, after which it was continuously cropped to winter wheat on early fall plowing.

Rotation 115-B was continuously cropped to winter rye which was plowed under for green manure for 10 years, after which it was continuously cropped to winter wheat on early fall plowing.

## ROTATION 116

Winter wheat on disked corn ground.  
Peas on early fall plowing.  
Oats on peas turned under.  
Corn on spring plowing.

## ROTATION 117

Oats on disked corn ground.  
Peas on early fall plowing.  
Winter wheat on peas turned under.  
Corn on spring plowing.

## ROTATION 118

Oats on disked corn ground.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Corn on spring plowing.

## ROTATION 119

Winter wheat on disked corn ground.  
Summer-fallow.  
Oats on summer-fallow.  
Corn on spring plowing.

## ROTATION 120

Oats on disked corn land.  
Sorgo on spring plowing.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Corn on fall plowing.

## ROTATION 131

Winter wheat on disked corn ground, seeded to sweetclover.  
Sweetclover turned under.  
Oats on sweetclover turned under.  
Corn on spring plowing.  
Rotation 131 at North Platte:  
Potatoes on disked wheat stubble.  
Oats on disked potato land.  
Winter wheat on disked oat stubble.

## ROTATION 132

Oats on disked corn ground, seeded to sweetclover.  
Sweetclover turned under.  
Winter wheat on sweetclover.  
Corn on spring plowing.

## ROTATION 133

Winter wheat on disked sorgo ground, seeded to sweetclover.  
Sweetclover turned under.  
Oats on sweetclover.  
Sorgo in 8-inch rows on spring plowing.

## ROTATION 133

(Revised January, 1919)

Winter wheat on fall plowing.  
Cowpeas on early fall plowing.  
Sweetclover on disked cowpea land.  
Sweetclover for hay.

Beginning with 1922, winter wheat was changed to cotton.

## ROTATION 134

Oats on disked sorgo ground, seeded to sweetclover.  
Sweetclover turned under.  
Winter wheat on sweetclover.  
Sorgo in 8-inch rows on spring plowing.



## ROTATION 134

(Revised January, 1919)

Sweetclover for hay.  
Cowpeas on fall plowing.  
Winter wheat on fall plowing.  
Sweetclover on disked wheat stubble.

Beginning with 1922, cowpeas changed to cotton and winter wheat to kafir on spring listing.

## ROTATION 135

Summer-fallow.  
Winter wheat on summer-fallow.  
Sweetclover, seeded late the previous fall on disked winter wheat stubble.  
Sweetclover.  
Corn on spring plowing.  
Oats on disked corn stubble.

## ROTATION 141

Oats on sod broken previous summer.  
Corn on spring plowing.  
Winter wheat on disked corn ground.  
Bromegrass on fall plowing.  
Bromegrass meadow.  
Bromegrass meadow broken up in summer.

## ROTATION 142

Oats on alfalfa sod broken previous summer.  
Corn on spring plowing.  
Winter wheat on disked corn ground.  
Alfalfa on fall-plowed land, sown without nurse crop.  
Alfalfa meadow.  
Alfalfa meadow broken up in summer.  
Beginning with 1922 at Lawton, winter wheat was changed to cotton on spring plowing.

## ROTATION 149

Corn on fall plowing.  
Winter wheat on disked corn ground.  
Corn on spring listing at Akron except in 1920, when it was on fall plowing, and in 1921, 1922, and 1923, when it was on fall listing.  
Winter wheat on uncultivated corn ground at Belle Fourche.

## ROTATION 150

Corn, double spaced, on fall plowing.  
Winter wheat on disked corn ground.

## ROTATION 151

Milo on green manure.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Winter rye, turned under for green manure.

## ROTATION 152

Milo on green manure.  
Corn in alternate rows, spring listed at Colby, spring plowed at Woodward.  
Winter wheat on disked corn ground.  
Winter rye, turned under for green manure.  
Kafir used in place of milo at Woodward after 1917.

## ROTATION 153

Winter wheat on winter rye turned under.  
Corn in alternate rows, spring listed at Colby; spring plowed at Woodward until 1919 and fall plowed thereafter.  
Milo, spring listed at Colby; spring plowed at Woodward until 1919 and fall plowed thereafter.  
Winter rye turned under for green manure.  
Kafir used in place of milo at Woodward after 1917.

## ROTATION 154

Milo on green manure.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Canada field peas, turned under for green manure.

Cowpeas and kafir used in place of field peas and milo at Woodward after 1917.  
Cowpeas used in place of field peas at Amarillo and Garden City.

## ROTATION 155

Milo on summer-fallow.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Summer-fallow.  
Kafir used in place of milo at Woodward after 1917.

## ROTATION 156

Milo on manured summer-fallow.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Summer-fallow, 10 tons of manure turned under.  
Kafir used in place of milo at Woodward after 1917.

## ROTATION 157

Oats on spring plowing.  
Milo on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 158

Corn on spring plowing.  
Milo on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 159

Milo on spring plowing.  
Milo on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 160

Kafir on spring plowing.  
Kafir on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 161

Milo on fall plowing.  
Kafir on fall plowing.  
Cowpeas on fall plowing.  
Feterita used in place of milo at Lawton after 1923.

## ROTATION 162

Milo on spring plowing.  
Kafir on spring plowing.  
Cowpeas on spring plowing.  
Feterita used in place of milo at Lawton after 1923.

## ROTATION 163

Kafir on fall plowing.  
Milo on fall plowing.  
Cowpeas on fall plowing.  
Feterita used in place of milo at Lawton after 1923.

## ROTATION 164

Winter wheat on disked cowpea land.  
Winter wheat on early fall-plowed wheat stubble.  
Cowpeas on spring plowing.

## ROTATION 165

Milo on summer-fallow.  
Kafir on spring plowing.  
Summer-fallow.  
Feterita used in place of milo at Lawton after 1923.  
Kafir on fall plowing at Lawton.

## ROTATION 166

Winter wheat on disked cowpea land.  
Milo on spring plowing.  
Cowpeas on spring plowing.  
Beginning with 1922, winter wheat was changed to cotton at Lawton.  
Winter rye used in place of winter wheat at Dalhart.  
Milo on fall plowing at Woodward.  
Feterita used in place of milo at Lawton after 1923.

## ROTATION 167

Winter wheat on disked cowpea land.  
Kafir on spring plowing.  
Cowpeas on spring plowing.  
Winter rye used in place of winter wheat at Dalhart.  
Beginning with 1922, winter wheat changed to cotton at Lawton.  
Kafir on fall plowing at Woodward.

## ROTATION 168

Kafir on summer-fallow.  
Milo on spring plowing.  
Summer-fallow.  
Feterita used in place of milo at Lawton after 1923.  
Milo and feterita on fall plowing at Lawton.

## ROTATION 169

Kafir on spring plowing.  
Milo on spring plowing.  
Cowpeas on spring plowing.  
Feterita used in place of milo at Lawton after 1923.

## ROTATION 170

Cowpeas on spring plowing.  
Winter wheat on disked cowpea land.  
Milo on early fall plowing.  
Kafir on spring plowing.

## ROTATION 171

Winter wheat on disked corn ground.  
Summer-fallow manured before plowing.  
Oats on manured summer-fallow.  
Corn on spring plowing.

## ROTATION 172

Oats on disked corn ground.  
Summer-fallow manured before plowing.  
Winter wheat on manured summer-fallow.  
Corn on spring plowing.

## ROTATION 195

Cotton on fall plowing.  
Winter wheat on cotton land.  
Kafir on early fall plowing.  
Changed beginning with 1923 to the following:  
Winter wheat, drilled.  
Cotton on fall plowing.  
Cotton on fall plowing.

## ROTATION 196

Cotton on fall plowing, top-dressed at time of planting.  
Winter wheat on cotton land.  
Kafir on early fall plowing.  
Changed beginning with 1923 to the following:  
Winter barley on disked cowpea stubble.  
Cotton on fall plowing.  
Cowpeas on fall plowing.

## ROTATION 197

Cotton on early fall plowing.  
Kafir on fall plowing.  
Winter wheat on disked kafir ground.  
Changed beginning with 1923 to the following:  
Winter wheat on fall plowing.  
Cotton on fall plowing.  
Winter wheat, drilled.

## ROTATION 198

Cotton on fall plowing.  
Oats on disked cotton land.  
Kafir on early fall plowing.  
Changed beginning with 1923 to the following:  
Winter wheat, drilled.  
Cotton on fall plowing, top dressed.  
Cotton on fall plowing.

## ROTATION 199

Cotton on fall plowing.  
Sorgo on fall plowing.  
Cowpeas on fall plowing.  
Changed beginning with 1923 to the following:  
Cowpeas on fall plowing, turned under for green manure.  
Winter wheat on green manure.  
Cotton on fall plowing.

## ROTATION 200

Cotton on fall plowing.  
Sudan grass on fall plowing.  
Cowpeas on fall plowing.  
Changed beginning with 1923 to the following:  
Cowpeas on spring plowing.  
Winter wheat on disked cowpea stubble.  
Cotton on spring plowing.

## ROTATION 201

Cotton on fall plowing.  
Cowpeas on fall plowing.  
Milo on fall plowing.  
Kafir instead of milo at Lawton.  
Changed at Lawton beginning with 1923 to the following:  
Spring barley on disked cowpea stubble.  
Cotton on fall plowing.  
Cowpeas on fall plowing.

## ROTATION 202

Cotton on spring plowing.  
Cowpeas on spring plowing.  
Milo on spring plowing.  
Kafir in place of milo at Lawton.  
Changed at Lawton beginning with 1923 to the following:  
Cowpeas on fall plowing, turned under for green manure.  
Cotton on green manure.  
Winter wheat, drilled.

## ROTATION 203

Milo on spring plowing.  
Cowpeas on spring plowing.  
Cotton on spring plowing.  
Kafir at Lawton instead of milo.  
Changed at Lawton beginning with 1923 to the following:  
Cowpeas on fall plowing.  
Winter wheat on disked cowpea stubble.  
Cotton on fall plowing.

## ROTATION 204

Milo on winter listing.  
Cowpeas on fall listing.  
Cotton on fall listing.  
Kafir at Lawton instead of milo.  
Changed at Lawton beginning with 1923 to the following:  
Cotton on fall plowing.  
Winter wheat, drilled, top-dressed.  
Winter wheat on fall plowing.

## ROTATION 205

Cotton on spring plowing.  
Cowpeas on spring plowing, turned under for green manure.  
Milo on green manure.  
Cotton and cowpeas on fall plowing at Lawton.  
Milo changed to feterita at Lawton after 1923.

## ROTATION 206

Cotton on spring plowing.  
Summer-fallow.  
Milo on summer-fallow.

## ROTATION 207

Milo on fall listing.  
Cowpeas on fall listing turned under for green manure.  
Corn on green manure.]

## ROTATION 208

Milo on fall plowing.  
Sudan grass on fall plowing.  
Peanuts on fall plowing.

## ROTATION 209

Corn on fall listing.  
Peanuts on fall listing.  
Pinto beans on fall listing.  
Pinto beans changed to Sudan grass beginning with 1923.

## ROTATION 210

Corn on fall plowing.  
Peanuts on fall plowing.  
Pinto beans on fall plowing.

## ROTATION 211

Millet on spring plowing.  
Pinto beans on spring plowing.  
Winter wheat on disked bean ground.

## ROTATION 212

Pinto beans on spring plowing.  
Millet on spring plowing.  
Winter wheat on early fall plowing.

## ROTATION 213

Kafir, spring listed.  
Milo, spring listed.  
Sudan grass on spring plowing.

## ROTATION 217

Millet on spring plowing.  
Cowpeas on spring plowing.  
Sorgo on spring plowing.

## ROTATION 218

Millet on fall plowing.  
Cowpeas on fall plowing.  
Sorgo on fall plowing.

## ROTATION 222

Milo on spring plowing.  
Summer-fallow.  
Cotton on summer-fallow.  
Cowpeas on spring plowing.

## ROTATION 223

Cotton on spring plowing.  
Summer-fallow.  
Milo on summer-fallow.  
Cowpeas on spring plowing.

## ROTATION 231

Cotton on fall plowing.  
Cowpeas on fall plowing.

## ROTATION 232

Cotton on fall plowing.  
Milo on fall plowing.

## ROTATION 233

otton on fall plowing.  
eanuts on fall plowing.

## ROTATION 234

Cowpeas on fall plowing.  
Peanuts on fall plowing.

## ROTATION 235

Milo on fall plowing.  
Peanuts on fall plowing.

## ROTATION 236

Milo on fall plowing.  
Cowpeas on fall plowing.

## ROTATION 237

Sweetclover for hay or seed.  
Common wheat on spring-plowed sweet-clover stubble, seeded to yellow-flowered sweetclover.

## ROTATION 238

Sweetclover for hay or seed.  
Common wheat on disked sweetclover stubble, seeded to yellow-flowered sweet-clover.

## ROTATION 242

Millet on disked corn.  
Corn on spring plowing.

## ROTATION 243

Flax on spring plowing.  
Corn on spring plowing.  
Oats on disked corn substituted for flax at Mandan after 1923.

## ROTATION 244

Flax on fall plowing.  
Corn on fall plowing.  
Rotation 244 at Mandan (known as 244-M) after 1922:  
Corn on spring plowing.  
Corn on spring plowing.  
Oats on disked corn.

## ROTATION 245

Flax on disked corn ground.  
Corn on spring plowing.  
Winter rye was substituted for flax at Mandan after 1922.

## ROTATION 246

Flax on disked corn ground.  
Corn on land manured and spring plowed.  
Winter rye was substituted for flax at Mandan after 1922.

## ROTATION 247

Flax on spring plowing.  
Wheat on spring plowing.

## ROTATION 248

Flax on spring plowing.  
Oats on spring plowing.

## ROTATION 249

Winter wheat on disked corn ground and milo listed in winter wheat stubble the same year.  
Corn on spring plowing.



## ROTATION 250

Winter wheat on disked corn ground, and cowpeas following winter wheat the same year.  
Corn on spring plowing.

## ROTATION 251

Winter wheat on disked corn ground and winter rye following winter wheat the same year.  
Corn on winter rye turned under.  
Changed beginning with 1924 to the following:  
Winter wheat on disked corn ground.  
Corn on spring plowing, manured.

## ROTATION 252

Winter wheat on disked corn ground.  
Corn on spring plowing.

## ROTATION 253

Winter wheat on disked corn ground.  
Corn on spring plowing, manure turned under.

## ROTATION 254

Winter wheat on disked corn ground, and winter wheat stubble plowed early and seeded to crimson clover about September 1.  
Corn on crimson clover turned under.  
Crimson clover discontinued and commercial fertilizer used beginning with 1921.

## ROTATION 255

Kafir continuously, fall plowed.

## ROTATION 256

Kafir continuously, fall plowed, with manure.

## ROTATION 257

Winter wheat on disked milo ground.  
Milo, listed.

## ROTATION 258

Oats on spring plowing.

Winter wheat on disked oat stubble at Sheridan and on uncultivated oat stubble at Dickinson.

## ROTATION 259

Winter wheat on disked bean ground.  
Pinto beans on spring plowing.

## ROTATION 260

Winter wheat on disked corn and cowpea land.  
Corn and cowpeas in alternate rows on fall plowing.  
Changed beginning with 1923 to the following:  
Cotton on spring plowing.  
Winter wheat, drilled.

## ROTATION 261

Winter wheat on early fall plowing.  
Oats on early fall plowing.

## ROTATION 262

Winter wheat on disked corn ground.  
Corn on early fall plowing.  
Changed at Lawton beginning with 1923 to the following:  
Oats on disked wheat stubble.  
Winter wheat on fall plowing.

## ROTATION 263

Winter wheat on disked milo stubble.  
Milo on early fall plowing.

## ROTATION 264

Winter wheat on disked kafir stubble.  
Kafir on early fall plowing.  
Changed at Lawton beginning with 1923 to the following:  
Spring barley on disked wheat stubble.  
Winter wheat on fall plowing.

## ROTATION 265

Winter wheat on disked cowpea stubble.  
Cowpeas on early fall plowing.  
Cowpeas on spring plowing at Lawton after 1922

## ROTATION 266

Winter wheat on green manure.  
Cowpeas on early fall plowing, turned under for green manure.

## ROTATION 267

Winter wheat on summer-fallow.  
Summer-fallow.

## ROTATION 268

Winter wheat on manured summer-fallow.  
Manured summer-fallow.  
Same as rotation 38.

## ROTATION 269

Winter wheat on summer-fallow top-dressed with manure.  
Summer-fallow.

## ROTATION 270

Summer-fallow, cultivated with duck-foot cultivator before seeding.  
Winter wheat on fallow; if wheat winter-killed, reseeded to oats.  
Winter wheat drilled in wheat or oats stubble.

## ROTATION 272

Milo on spring plowing.  
Summer-fallow, manured before plowing.  
Cotton on manured summer-fallow.  
Cowpeas on spring plowing.

## ROTATION 273

Cotton on spring plowing.  
Summer-fallow, manured before plowing.  
Milo on manured summer-fallow.  
Cowpeas on spring plowing.

## ROTATION 274

Summer-fallow.  
Winter wheat on summer-fallow.  
Cotton on fall plowing.  
Kafir on spring plowing.  
Beginning with 1922, drilled sorgo on fall plowing was substituted for summer-fallow and corn on fall plowing for winter wheat.

## ROTATION 275

Summer-fallow.  
Winter wheat on summer-fallow top-dressed with manure.  
Cotton on fall plowing.  
Kafir on spring plowing.

Beginning with 1922, drilled sorgo on fall plowing was substituted for fallow and cotton on fall plowing for winter wheat.

## ROTATION 276

Cowpeas on fall plowing.  
Cotton on fall plowing.  
Oats on fall plowing.  
Kafir on fall plowing top-dressed with manure and disked in winter.

## ROTATION 277

Same as rotation 40.

## ROTATION 278

Corn on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 279

Oats on disked cowpea ground.  
Cowpeas on early fall plowing.

## ROTATION 280

Kafir on fall plowing.  
Cotton on spring plowing.

## ROTATION 281

Kafir on early fall plowing.  
Oats on disked kafir ground.

## ROTATION 282

Kafir on spring plowing.  
Corn on spring plowing.

## ROTATION 283

Kafir on spring plowing.  
Peanuts on spring plowing.

## ROTATION 284

Kafir on spring plowing top-dressed with manure at time of planting.  
Cowpeas on spring plowing.

## ROTATION 285

Kafir on spring plowing.  
Cowpeas on spring plowing.

## ROTATION 286

Kafir on green manure.  
Cowpeas on spring plowing turned under for green manure.

## ROTATION 287

Kafir on summer-fallow.  
Summer-fallow.

## ROTATION 288

Kafir on manured summer-fallow.  
Manured summer-fallow.

## ROTATION 289

Kafir on summer-fallow top-dressed with manure at time of planting.  
Summer-fallow.

## ROTATION 290

Kafir on spring plowing.  
Pinto beans on spring plowing.

## ROTATION 291

Milo on early fall plowing.  
Oats on disked milo ground.

## ROTATION 292

Milo on spring plowing.  
Corn on spring plowing.

## ROTATION 293

Milo on spring plowing.  
Peanuts on spring plowing.

## ROTATION 294

Milo on spring plowing.  
Kafir on spring plowing.

|  |  |   |
|--|--|---|
| <p>ROTATION 295</p> <p>Milo on spring plowing.<br/>Cowpeas on spring plowing.</p>  | <p>ROTATION 331</p> <p>Kafir on rye turned under.<br/>Summer-fallow.<br/>Winter wheat on summer-fallow.<br/>Winter wheat on early fall listing.<br/>Winter rye on early fall listing turned under for green manure.</p>                                      | <p>ROTATION 399</p> <p>Cotton on summer-fallow top-dressed with manure.<br/>Summer-fallow.</p>  |
| <p>ROTATION 296</p> <p>Milo on green manure.<br/>Cowpeas on spring plowing turned under for green manure.</p>  | <p>ROTATION 332</p> <p>Kafir on early fall listing.<br/>Summer-fallow, cultivated and early spring listed.<br/>Winter wheat on summer-fallow.<br/>Winter rye on early fall listing turned under for green manure.<br/>Winter wheat on rye, green manure.</p> | <p>ROTATION 401</p> <p>Summer-fallow.<br/>Winter wheat on summer-fallow.<br/>Winter wheat on early fall plowing.<br/>Kafir on fall plowing.<br/>Kafir was on fall listing at Hays after 1923.</p> |
| <p>ROTATION 297</p> <p>Milo on summer-fallow.<br/>Summer-fallow.</p>   | <p>ROTATION 349</p> <p>Kafir on fall plowing.<br/>Winter wheat on disked kafir ground.</p>   | <p>ROTATION 402</p> <p>Kafir on fall plowing.<br/>Summer-fallow.<br/>Winter wheat on summer-fallow.<br/>Kafir on fall plowing.</p>  |
| <p>ROTATION 298</p> <p>Milo on manured summer-fallow.<br/>Summer-fallow, manured.</p>  | <p>ROTATION 350</p> <p>Kafir, double spaced, on fall plowing.<br/>Winter wheat on disked kafir ground.</p>   | <p>Both plots of kafir on spring plowing at Woodward from 1916 to 1919, inclusive, and on fall listing at Hays after 1923.</p>  |
| <p>ROTATION 299</p> <p>Milo on green manure.<br/>Sudan grass on spring plowing turned under for green manure.</p>  | <p>ROTATION 364</p> <p>Winter wheat on disked cowpea ground, top-dressed with manure.<br/>Cowpeas on early fall plowing.<br/>Cowpeas on spring plowing at Lawton after 1922.</p>   | <p>ROTATION 403</p> <p>Winter wheat on early fall plowing.<br/>Winter wheat on early fall plowing.<br/>Corn on spring plowing.<br/>Barley on disked corn ground.</p>                              |
| <p>ROTATION 300</p> <p>Milo on spring plowing.<br/>Pinto beans on spring plowing.</p>  | <p>ROTATION 390</p> <p>Cotton on fall plowing.<br/>Kafir and cowpeas in alternate rows on fall plowing.<br/>Changed beginning with 1923 to the following:<br/>Winter rye, drilled, turned under.<br/>Cotton on rye, green manure.</p>                        | <p>ROTATION 404</p> <p>Winter wheat on early fall plowing.<br/>Winter wheat on early fall plowing.<br/>Kafir on spring plowing.<br/>Barley on disked kafir ground.</p>                            |
| <p>ROTATION 301</p> <p>Milo on spring plowing top-dressed with manure at time of plowing.<br/>Cowpeas on spring plowing.</p>   | <p>ROTATION 391</p> <p>Cotton on early fall plowing.<br/>Oats on disked cotton land.</p>   | <p>ROTATION 405</p> <p>Winter wheat on summer-fallow.<br/>Kafir on early fall listing.<br/>Summer-fallow, cultivated and early spring listed.</p>   |
| <p>ROTATION 302</p> <p>Milo on summer fallow top-dressed with manure at time of planting.<br/>Summer-fallow.</p>   | <p>ROTATION 392</p> <p>Cotton on spring plowing.<br/>Corn on spring plowing.<br/>Changed beginning with 1923 to the following:<br/>Winter wheat, drilled.<br/>Cotton on fall plowing.</p>  | <p>ROTATION 406</p> <p>Barley on disked corn ground.<br/>Winter wheat on early fall listing.<br/>Winter wheat on shallow, early fall plowing.<br/>Corn, listed.</p>                               |
| <p>ROTATION 303</p> <p>Sorgo drilled on spring plowing.<br/>Milo on spring plowing.</p>  | <p>ROTATION 393</p> <p>Cotton on spring plowing.<br/>Peanuts on spring plowing.</p>  | <p>ROTATION 407</p> <p>Barley on disked milo ground.<br/>Winter wheat on shallow, early fall plowing.<br/>Winter wheat on early fall listing.<br/>Milo, listed.</p>                               |
| <p>ROTATION 304</p> <p>Summer-fallow.<br/>Sorgo drilled on summer-fallow.</p>  | <p>ROTATION 394</p> <p>Cotton on spring plowing top-dressed with manure.<br/>Cowpeas on spring plowing.</p>  | <p>ROTATION 408</p> <p>Wheat on disked corn ground.<br/>Corn listed in on wheat stubble.</p>  |
| <p>ROTATION 305</p> <p>Summer-fallow first plowing in fall.<br/>Wheat on summer-fallow.<br/>Oats on fall plowing.</p>  | <p>ROTATION 395</p> <p>Cotton on spring plowing.<br/>Cowpeas on spring plowing.</p>  | <p>Rotation 408 at North Platte:<br/>Barley on disked milo ground.<br/>Rye on fall plowing.<br/>Corn, listed.<br/>Milo on spring plowing.</p>   |
| <p>ROTATION 321</p> <p>Summer-fallow, cultivated and early spring listed.<br/>Potatoes on summer-fallow.<br/>Millet on disked potato ground.<br/>Kafir on early fall listing.</p>                                  | <p>ROTATION 396</p> <p>Cotton on green manure.<br/>Cowpeas on spring plowing turned under for green manure.</p>  | <p>ROTATION 409</p> <p>Winter wheat on sorgo ground.<br/>Sorgo on fall plowing.</p>   |
| <p>ROTATION 322</p> <p>Summer-fallow, cultivated and early spring listed.<br/>Tepary beans on summer-fallow.<br/>Millet on disked bean ground.<br/>Kafir on early fall listing.</p>                                | <p>ROTATION 397</p> <p>Cotton on summer-fallow.<br/>Summer-fallow.</p>   | <p>Rotation 409 at North Platte:<br/>Barley on disked corn ground.<br/>Rye on fall plowing.<br/>Milo on spring plowing.<br/>Corn, listed.</p>   |
| <p>Tepary beans changed to cowpeas beginning with 1916.</p>  | <p>ROTATION 398</p> <p>Cotton on manured summer-fallow.<br/>Manured summer-fallow.</p>   | <p>ROTATION 410</p> <p>Winter rye on sorgo ground.<br/>Sorgo on fall plowing.</p>   |
| <p>ROTATION 323</p> <p>Summer-fallow, cultivated and early spring listed.<br/>Millet on summer-fallow.<br/>Kafir on early fall listing, double rowed for feed.<br/>Kafir on early fall listing, thin for seed.</p> | <p>ROTATION 399</p> <p>Cotton on spring plowing.<br/>Cowpeas on spring plowing.</p>  | <p>Rotation 410 at North Platte:<br/>Barley on disked corn ground.<br/>Winter-wheat on fall plowing.<br/>Corn, listed.</p>  |
| <p>Kafir following millet changed to Sudan grass, close drilled, beginning with 1921.</p>  |  | <p>ROTATION 411</p> <p>Winter wheat on sorgo ground.<br/>Winter rye on winter-wheat stubble.<br/>Sorgo on fall plowing.</p>   |



Rotation 411 at North Platte:  
Barley on disked oat stubble.  
Winter wheat on disked barley stubble.  
Oats on fall plowing.

## ROTATION 412

Winter rye on corn ground.  
Corn on fall plowing.

Rotation 412 at North Platte:  
Barley on disked milo stubble.  
Oats on fall plowing.  
Milo on spring plowing.

## ROTATION 413

Winter wheat on corn ground where corn  
has been husked in the field.  
Corn on fall plowing.

Rotation 413 was spring plowed for corn at Dickinson.

Rotation 413 at North Platte:  
Barley on disked milo ground.  
Winter wheat on fall plowing.  
Milo on spring plowing.

## ROTATION 414

Summer-fallow.  
Potatoes on summer-fallow.

Rotation 414 at North Platte:  
Barley on summer-fallow.  
Oats on fall plowing.  
Summer-fallow.

## ROTATION 415

Wheat on disked potato ground.  
Potatoes on spring plowing.

Rotation 415 at North Platte:  
Winter rye on summer-fallow.  
Barley on fall plowing.  
Summer-fallow.

## ROTATION 416

Summer-fallow.  
Oats on summer-fallow.  
Winter wheat on oat stubble.

Rotation 416 at North Platte:  
Barley on disked corn ground.  
Winter rye on disked barley stubble.  
Corn, listed.

## ROTATION 417

Summer-fallow.  
Oats on summer-fallow.  
Winter rye on oat stubble.

Rotation 417 at North Platte:  
Winter rye on disked corn ground.  
Barley on spring plowing.  
Corn, listed.

## ROTATION 418

Corn on spring plowing.  
Wheat on disked corn ground.  
Winter wheat on wheat stubble.

## ROTATION 419

Corn on spring plowing.  
Wheat on disked corn ground.  
Winter rye on wheat stubble.

## ROTATION 420

Winter rye and sweetclover on oat stubble.  
Sweetclover for hay or seed, or both.  
Corn on spring plowing.  
Oats on disked corn ground.

## ROTATION 421

Corn on spring plowing.  
Wheat on disked corn ground.  
Corn on spring plowing.

## ROTATION 422

Corn on disked corn ground.  
Wheat on disked corn ground.  
Corn on spring plowing.

## ROTATION 423

Millet on disked corn ground.  
Wheat on disked millet stubble.  
Corn on spring plowing.

## ROTATION 424

Millet on disked sunflower ground.  
Wheat on disked millet stubble.  
Sunflowers on spring plowing.

## ROTATION 425

Winter wheat seeded in cornstalks.  
Millet on spring plowing.  
Corn on spring plowing.

## ROTATION 426

Potatoes on manured summer-fallow.  
Wheat on disked potato land.  
Summer-fallow, manured.

## ROTATION 427

Potatoes on summer-fallow.  
Wheat on disked potato land.  
Summer-fallow.

## ROTATION 428

Potatoes on spring plowing.  
Wheat on disked potato land.  
Corn on spring plowing.

## ROTATION 429

Peas for hay on disked corn ground.  
Potatoes on early fall plowing.  
Wheat on disked potato ground.  
Corn on spring plowing, manured.

## ROTATION 431

Winter wheat seeded in wheat stubble.  
Marquis wheat on spring plowing.

## ROTATION 440

Oats on disked corn ground.  
Corn on spring plowing.

## ROTATION 441

Corn on spring plowing.  
Potatoes on disked corn ground.  
Flax, with crested wheatgrass, on disked  
potato land.  
Crested wheatgrass.  
Crested wheatgrass.  
Flax on spring breaking.

## ROTATION 449

Corn on spring plowing.  
Wheat on disked corn ground.

## ROTATION 471

Flax continuously on spring plowing, sown  
in strips of four rows each with a corre-  
sponding intertilled strip.

## ROTATION 472

Durum wheat on plowless summer-fallow.  
Summer-fallow cultivated with duck-foot  
cultivator without plowing.

## ROTATION 473

Marquis wheat on plowless summer-fallow.  
Summer-fallow cultivated with duck-foot  
cultivator without plowing.

## ROTATION 474

Winter wheat on milo stubble without cul-  
tivation.  
Milo in 44-inch rows on spring-plowed  
wheat stubble.

## ROTATION 475

Corn on fall-plowed milo.  
Milo on fall-plowed corn.

## ROTATION 476

Milo in 88-inch rows on early fall-listed  
wheat stubble.  
Winter wheat in milo stubble without cul-  
tivation.

## ROTATION 477

Kafir in 88-inch rows on early fall-listed  
wheat stubble.  
Winter wheat in kafir stubble without cul-  
tivation.

## ROTATION 479

479-A.—Sorgo continuously in cultivated  
rows on spring plowing.  
479-B.—Sorgo continuously drilled at the  
rate of 1 bushel per acre on  
spring plowing.

## ROTATION 480

480-A.—Alfalfa continuously in 44-inch  
rows.  
480-B.—Alfalfa continuously in 36-inch  
rows.  
480-C.—Alfalfa continuously in 24-inch  
rows.  
480-D.—Alfalfa continuously in 8-inch  
rows.

## ROTATION 481

Cotton on spring listing.  
Milo on spring listing, headed, stalks left  
standing.

## ROTATION 482

Kafir sown broadcast on spring listing.  
Milo on spring listing, headed, stalks left  
standing.

## ROTATION 483

Millet on spring listing.  
Milo on spring listing, headed, stalks left  
standing.

## ROTATION 484

Sunflowers on spring listing.  
Milo on spring listing, headed, stalks left  
standing.

## ROTATION 501

Kafir, fall listed, leveled in spring, planted  
with lister.  
Summer-fallow, deep tilled.  
Winter wheat on summer-fallow.

Milo in place of kafir at Colby.  
Fallow not deep tilled at Colby.

## ROTATION 502

Kafir, fall listed, leveled in spring, planted  
with lister.  
Summer-fallow, dynamited before plowing.  
Winter wheat on summer-fallow.

Milo in place of kafir at Colby.  
Fallow not dynamited at Colby.

## ROTATION 503

Kafir, disked early, fall listed, leveled in  
spring, planted with lister.  
Summer-fallow.  
Winter wheat on summer-fallow.

Milo in place of kafir at Colby.

## ROTATION 504

Kafir, fall listed, leveled in spring, planted  
with lister.  
Summer-fallow.  
Winter wheat on summer-fallow.

Milo in place of kafir at Colby.

## ROTATION 505

Kafir, fall listed, planted by splitting ridges.  
Summer-fallow.  
Winter wheat on summer-fallow.

Milo in place of kafir at Colby.

## ROTATION 506

Kafir, fall listed, harrowed down in spring,  
listed in same furrows.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Milo in place of kafir at Colby.

## ROTATION 507

Kafir, fall listed, harrowed in spring,  
planted by splitting ridges.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Milo in place of kafir at Colby.

## ROTATION 508

Kafir, early spring listed, planted in  
furrows, cultivated to keep free from  
weeds until planting.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Milo in place of kafir at Colby.

## ROTATION 509

Kafir, disked in spring, planted with lister.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Milo in place of kafir at Colby.

## ROTATION 510

Kafir, planted with lister, without culti-  
vation.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Milo in place of kafir at Colby.

## ROTATION 551

Winter wheat on summer-fallow.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 552

Winter wheat on summer-fallow.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 553

Winter wheat on summer-fallow.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 554

Winter wheat on summer-fallow, 600  
pounds straw top-dressing.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 555

Winter wheat on summer-fallow, 600  
pounds manure top-dressing.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 556

Winter wheat on summer-fallow, 1,200  
pounds manure top-dressing.  
Kafir, listed.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 557

Winter wheat on summer-fallow.  
Kafir, listed, 600 pounds manure.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 558

Winter wheat on summer-fallow.  
Kafir, listed, 1,200 pounds manure, top-  
dressing.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 559

Winter wheat on summer-fallow.  
Kafir, listed, 1,800 pounds manure, top-  
dressing.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 560

Winter wheat on summer-fallow.  
Kafir, listed, 2,400 pounds manure, top-  
dressing.  
Summer-fallow.  
Milo in place of kafir at Colby.  
Kafir at Hays planted with a lister on fall plowing.

## ROTATION 561

Oats on spring plowing.  
Winter wheat on disked oat stubble.  
Corn on spring plowing.

## ROTATION 562

Oats on fall plowing.  
Winter wheat on disked oat stubble.  
Corn on fall plowing.

## ROTATION 568

Summer-fallow.  
Winter wheat on summer-fallow.  
Winter wheat on disked stubble.

## ROTATION 569

Wheat on summer-fallow.  
Wheat on disked stubble.  
Summer-fallow.

Winter wheat seeded on summer-fallow at Dickinson;  
if winterkilled, reseeded to spring wheat.

## ROTATION 570

Wheat on summer-fallow.  
Summer-fallow.  
Summer-fallow.  
Summer-fallow.

Milo in place of spring wheat at Amarillo, Big Spring,  
and Tucumcari after 1917. Winter wheat in place of  
spring wheat at Hays and Woodward.

## ROTATION 571

Winter wheat, continuous, on disked  
wheat stubble.

## ROTATION 572

Winter wheat on fall plowing.  
Winter wheat on disked wheat stubble.

## ROTATION 573

Winter wheat on fall plowing.  
Winter wheat on disked wheat stubble.  
Winter wheat on disked wheat stubble.

## ROTATION 574

Winter wheat on disked corn ground.  
Winter wheat on early fall plowing.  
Winter wheat, stubbled in.  
Corn, listed.

## ROTATION 575

Winter wheat on disked corn ground.  
Winter wheat on early fall plowing.  
Milo, listed.  
Corn, listed.

## ROTATION 576

Oats, continuous, on disked oat stubble.

## ROTATION 577

Oats on fall plowing.  
Oats on disked oat stubble.

## ROTATION 578

Oats on fall plowing.  
Oats on disked oat stubble.  
Oats on disked oat stubble.

## ROTATION 579

Summer-fallow.  
Oats after summer-fallow.  
Oats on disked oat stubble.

## ROTATION 580

Winter wheat on fall plowing.  
Summer-fallow.  
Winter wheat on summer-fallow.  
Winter wheat on disked wheat stubble.

## ROTATION 581

Wheat continuously, disked.

## ROTATION 582

Wheat on fall plowing.  
Wheat on disked stubble.  
Wheat on spring plowing instead of fall plowing at  
Archer.

## ROTATION 583

Wheat on fall plowing.  
Wheat on disked stubble.  
Wheat on disked stubble.  
Spring plowing instead of fall plowing at Dickinson  
and Archer.

## ROTATION 591

Winter wheat continuously, without culti-  
vation.

## ROTATION 592

Winter wheat continuous, on fall plowing,  
grown in strips about 30 inches wide  
alternating with cultivated strips of  
about equal width.

## ROTATION 593

Summer-fallow.  
Winter wheat seeded with furrow drill  
on summer-fallow.

## ROTATION 594

Wheat continuously on land spring  
plowed 8 inches deep.

## ROTATION 595

Wheat continuously on land spring  
plowed 4 inches deep.

## ROTATION 601

Barley on disked milo ground.  
Milo on spring plowing.

## ROTATION 605

Oats on fall plowing.  
Summer-fallow (Spalding deep tilled).  
Wheat on summer-fallow.



## ROTATION 606

- Plot A: Continuously cropped to winter wheat, on fall plowing.  
 Plot B: Continuously cropped to winter wheat, on fall plowing in the even years and on disked stubble in the odd years.  
 Plot C: Continuously cropped to winter wheat, on fall plowing every third year (1916, 1919, 1922, etc.) and on disked stubble the other years.  
 Plot D: Continuously cropped to winter wheat, on fall plowing every fourth year (1916, 1920, 1924) and on disked stubble the other years.  
 Plot E: Continuously cropped to winter wheat, on fall plowing every fifth year (1916, 1921, 1926) and on disked stubble the other years.  
 Plot F: Continuously cropped to winter wheat, plowed as seems necessary.

## ROTATION 607

Winter wheat continuously, on early fall plowing.

## ROTATION 608

- A.—Winter wheat on early fall plowing.  
 B.—Winter wheat on disked wheat stubble.

## ROTATION 609

- A.—Winter wheat on early fall plowing.  
 B.—Winter wheat on disked wheat stubble.  
 C.—Winter wheat on second-year disked wheat stubble.

## ROTATION 610

- A.—Winter wheat on early fall plowing.  
 B.—Winter wheat on disked wheat stubble.  
 C.—Winter wheat on second-year disked wheat stubble.  
 D.—Winter wheat on third-year disked wheat stubble.

## ROTATION 611

- A.—Winter wheat on early fall plowing.  
 B.—Winter wheat on disked wheat stubble.  
 C.—Winter wheat on second-year disked wheat stubble.  
 D.—Winter wheat on third-year disked wheat stubble.  
 E.—Winter wheat on fourth-year disked wheat stubble.

## ROTATION 613

Corn on spring plowing.  
 Wheat on disked corn ground.  
 Oats on fall plowing.

## ROTATION 614

Corn on spring plowing.  
 Wheat on disked corn ground.  
 Oats on disked stubble.

## ROTATION 615

Corn on spring plowing (Spalding deep tilled).  
 Wheat on disked corn ground.  
 Oats on fall plowing.

## ROTATION 616

Corn on shallow spring plowing.  
 Wheat on disked corn ground.  
 Oats on shallow fall plowing.

## ROTATION 620

Corn on spring plowing.  
 Spring wheat on disked corn ground.  
 Sweetclover sown with the wheat the previous year.  
 A fourth plot in this rotation is in alfalfa for four years, after which the alfalfa is broken up and the plot enters into the rotation, and another plot is laid down in alfalfa following corn.

During the period shown in the tables the rotation has not been affected by the alfalfa.

## OUTLINES OF TILLAGE METHODS

## CONTINUOUSLY CROPPED PLOTS

The same crop was grown continuously on the following plots:

- A.—Spring plowed 4 to 6 inches deep, except for fall-sown grain for which the ground was plowed 4 to 6 inches deep just before seeding.  
 B.—Fall plowed 6 to 8 inches deep. For fall-sown grain the land is plowed as soon as practicable after the previous crop is harvested.  
 E.—Fall plowed 6 to 8 inches deep and subsoiled to 16 inches.

Plot E for winter rye at Mandan was continuously cropped on cultivated but unplowed stubble.

- F.—Fall listed for small grain; cotton; corn at Moccasin; sorgo at Ardmore; corn, kafir, and milo at Akron; and kafir and milo at Garden City. Winter rye on plot F at Mandan drilled in stubble without cultivation. Sorgo on plot F at Akron seeded in 7-inch drills at the rate of 20 pounds to the acre on spring plowing. Other crops planted with a lister without previous cultivation, except that for row crops other than cotton at Lawton after 1920 the plot was cultivated in spring and deep listed.

- G.—Spring plowed 8 inches deep for spring wheat. Row crops planted with lister after previous spring cultivation.

Plot G for corn at Edgeley was spring plowed.  
 Plot G for row crops at Lawton was cultivated in spring and shallow listed.  
 For winter wheat at Woodward and Big Spring, plot G was fall listed and given more cultivation than plot F.  
 For spring wheat plot G was late fall plowed at Akron, and also at Garden City until 1915. At Amarillo it had varied treatment.

- T.—Fall plowed and manured for milo and kafir at Amarillo and Woodward and for winter wheat at North Platte.

- U.—Double listed and manured for winter wheat at Lawton.

- V.—Spring plowed and manured for milo at Dalhart; spring plowed and top-dressed for broomcorn, sorgo, corn, kafir, and milo at Lawton.

- W.—Fall plowed and planted with lister for cotton at Tucumcari, Lawton and Big Spring, and for kafir and milo at Hays is a duplicate of plot A.

- X.—Not plowed, but disked at seeding time (with winter wheat and winter rye at Woodward only).

- Y.—Early fall plowed 4 inches deep (with winter wheat and winter rye at Woodward only).

- Z.—Not plowed, but disked whenever necessary from harvest to seeding (with winter wheat and winter rye at Woodward only).

## METHODS OF SUMMER-FALLOWING

The same crop was grown in alternation with summer-fallow on each of the following plots:

C or D.—

H or I.—The plot to be fallowed was plowed in the fall; north of Hays worked down in the fall; at Hays and southward replowed in summer.

J or K.—The plot to be fallowed was plowed in the fall and went through the winter rough.

L or M.—The plot to be fallowed was plowed in the spring before vegetation had made much growth.

N or O.—The plot to be fallowed was plowed later in the season than the fallow plot in the pair L and M.

P or Q.—The plot to be fallowed was listed in the fall.

R or S.—The plot to be fallowed was listed in the fall and subsoiled in the lister furrows.

## DELAYED SEEDING WITH SPRING WHEAT AT MANDAN

DS-A.—Spring wheat continuously. Spring plowed 6 inches deep.

DS-B.—Spring wheat continuously. Fall plowed 6 to 8 inches deep.

DS-C or D.—Spring wheat in alternation with summer-fallow.

DS-E.—Spring wheat continuously. Fall plowed 6 to 8 inches deep and subsoiled to 16 inches.

DS-F.—Spring wheat continuously. Fall listed and worked level in the spring.

The wheat plots in this series are cultivated at the time of seeding the other plots, but seeding is delayed about four weeks and the land cultivated with a duck-foot cultivator and harrow before seeding.

## METHODS OF SEEDING WINTER WHEAT AT ARCHER

Winter wheat was grown in alternation with summer-fallow on each of the following plots:

1 or 5.—Fallow plowed early and seeded with furrow drill.

2 or 6.—Fallow plowed late and seeded with furrow drill.

3 or 7.—Fallow plowed early and seeded with common disk drill.

4 or 8.—Fallow plowed late and seeded with common disk drill.

9 or 11.—Fallow cultivated with duck-foot cultivator, without plowing, and seeded with common disk drill.

10 or 12.—Fallow cultivated with duck-foot cultivator, without plowing, and seeded with furrow drill.

## DEEP-TILLAGE EXPERIMENTS WITH THE SPALDING DEEP-TILLAGE MACHINE AND WITH BLASTING AT AKRON

DT-L.—Wheat following wheat on land deep tilled each year.

J or M.—Wheat following wheat the first year after deep tillage on land deep tilled in alternate years, plot J in the odd years and M in the even.



- M or J.—Wheat following wheat the second year after deep tillage on land deep tilled in alternate years, plot M in the odd years and J in the even.
- DT-K.—Wheat following wheat on land with ordinary plowing each year.
- D or N.—Wheat following corn on land deep tilled each year, plot D in the odd years and N in the even.
- B or O.—Wheat following corn the first year after deep tillage on land deep tilled in alternate years, plot B in the odd years and O in the even.
- C or P.—Wheat following corn the second year after deep tillage on land deep tilled in alternate years, plot C in the odd years and P in the even.
- A or Q.—Wheat following corn on land with ordinary plowing each year, plot A in the odd years and Q in the even.
- DT-F.—Corn following corn on land deep tilled each year.
- H or E.—Corn following corn the first year after deep tillage on land deep tilled in alternate years, plot H in the odd years and E in the even.
- E or H.—Corn following corn the second year after deep tillage on land deep-tilled in alternate years, plot E in the odd years and H in the even.
- DT-G.—Corn following corn on land with ordinary plowing each year.
- N or D.—Corn following wheat on land deep tilled each year, plot N in the odd years and D in the even.
- P or C.—Corn following wheat the first year after deep tillage on land deep tilled in alternate years, plot P in the odd years and C in the even.
- O or B.—Corn following wheat the second year after deep tillage on land deep tilled in alternate years, plot O in the odd years and B in the even.
- Q or A.—Corn following wheat on land with ordinary plowing each year, plot Q in the odd years and A in the even.

#### SEED-BED PREPARATIONS OF WINTER-WHEAT STUBBLE FOR WINTER WHEAT AT HAYS

[Sown with a disk drill, the plots were duplicated or triplicated as shown in the table of yields. The most of them, as shown in the table of yields, were also grown in duplicate, sown with a disk-furrow drill from 1919 to 1923, inclusive]

- SH- 1.—Volunteer.
- SH- 2.—Late fall plowed.
- SH- 3.—Early fall plowed.
- SH- 4.—Early fall disked and plowed.
- SH- 5.—Early fall disked.
- SH- 6.—Early fall plowed.
- SH- 7.—Stubble burned, no cultivation.
- SH- 8.—Stubbed in, no cultivation.
- SH- 9.—Early fall plowed.
- SH-10.—Early fall listed.
- SH-11.—Early fall listed; relisted, splitting ridges.
- SH-12.—Early fall plowed.

#### SEED-BED EXPERIMENTS CONDUCTED AT GARDEN CITY

- \*1.—Kafir on land listed in the fall, cultivated, and ridges split at seeding.
- \*2.—Kafir on land fall listed, uncultivated, ridges split at seeding.
- \*3.—Kafir, listed at seeding time.
- \*4.—Kafir on land cultivated in spring and listed at seeding time.
- \*5.—Kafir on land fall listed, cultivated, and relisted in same furrows.
- \*6.—Kafir on land early spring listed, cultivated, and relisted in same furrows.
- \*7.—Kafir on land early spring listed, ridges split at seeding time.
- \*8.—Kafir on land spring plowed and shallow listed at planting time in 1913; spring cultivated and shallow listed at planting time in 1914; late fall plowed and shallow listed at planting time in 1915, 1916, and 1917; fall listed, ridges split in early spring, and cultivated in 1918, 1919, 1920, and 1921; and on land spring cultivated and shallow listed at planting time from 1922 to 1926.
- \*9.—Kafir in 16-inch drills on shallow fall plowing from 1913 to 1917; milo on land uncultivated until planted with a lister, from 1921 to 1926.
- \*10.—Kafir on land fall listed and spring cultivated, 1913 to 1917. Kafir on land early spring listed and cultivated, 1918 to 1920. Milo on land spring cultivated and planted with lister, 1921 to 1926.
- \*11.—Kafir in 8-inch drills on 8-inch fall plowing.
- \*12.—Kafir in 8-inch drills on 4-inch fall plowing.

- \*13.—Kafir in 8-inch drills on disked kafir stubble.
- \*14.—Kafir in 8-inch drills on kafir stubble cultivated during the spring.
- \*15.—Kafir on cultivated land, listed in early spring, six cultivations after planting, from 1913 to 1917; late fall plowed, listed lightly at seeding time from 1918 to 1920; fall listed, leveled in spring, and planted in 8-inch rows from 1921 to 1926.
- \*16.—Kafir on cultivated land, listed in early spring, two cultivations after planting, from 1913 to 1917; fall plowed and planted in 16-inch rows from 1918 to 1920; spring plowed and planted in 8-inch rows from 1921 to 1926.
- \*17.—Milo on early spring listing.
- \*18.—Sorgo on early spring listing, 1913 to 1921, on fall plowing, 1922 to 1926.
- \*19.—Milo and fallow in alternation with \*21.
- \*20.—Sorgo and fallow in alternation with \*22.
- \*21.—Fallow and milo in alternation with \*19.
- \*22.—Fallow and sorgo in alternation with \*20.
- \*23.—Kafir and fallow in alternation with \*25; stand twice that of other plots.
- \*24.—Kafir and fallow in alternation with \*26.
- \*25.—Fallow and kafir in alternation with \*23; stand twice that of other plots.
- \*26.—Fallow and kafir in alternation with \*24.
- \*27.—Kafir and fallow in alternation with \*29. Kafir in 16-inch rows until 1920 and in 8-inch rows thereafter.
- \*28.—Fallow and kafir in 8-inch rows in alternation with \*30 until 1920. Beginning with 1921 the kafir was replaced by Sudan grass.
- \*29.—Fallow and kafir in alternation with \*27.
- \*30.—Fallow and kafir or Sudan grass in alternation with \*28.
- \*31.—Kafir from 1913 to 1921 on land cultivated and early spring listed. Feterita on fall plowing from 1922 to 1926.
- \*32.—Kafir from 1913 to 1921 on land cultivated and listed in early spring. Feterita on fallow in alternation with \*36 from 1922 to 1926.
- \*33.—Broomcorn on land cultivated and listed at planting time.
- \*34.—Broomcorn on fallow in alternation with \*35.
- \*35.—Broomcorn on fallow in alternation with \*34.
- \*36.—Feterita on fallow in alternation with \*32.

#### CULTURAL METHODS WITH MILO AT WOODWARD AND TUCUMCARI AND WITH KAFIR AT LAWTON

The same crop was grown continuously on the following plots:

- CM-1.—Kept free from weeds with disk, planted by shallow listing.
- CM-2.—Kept free from weeds with disk; surface planted.
- CM-3.—Early spring listed; cultivated, retaining ridges; planted in furrows with surface planter.
- CM-4.—Early spring listed, ridges harrowed down, and planted by relisting in same furrows.
- CM-5.—Early spring listed; planted by splitting ridges with lister.

#### LISTING METHODS WITH MILO AT DALHART (SOUTH FIELD)

Milo was grown continuously on the following plots:

- LM-1.—Kept free from weeds in spring with disk, surface planted.
- LM-2.—Kept free from weeds with disk, planted with furrow openers.
- LM-3.—Spring listed, harrowed, and relisted.
- LM-4.—Spring listed, relisted, splitting ridges.
- LM-5.—Fall listed, and planted with lister.
- LM-6.—Spring listed, and planted with lister.
- LM-7.—Spring listed, harrowed, and planted with lister.

#### LISTING METHODS AT DALHART, TUCUMCARI, LAWTON, AND BIG SPRING

[With milo in the north field at Dalhart, at Tucumcari in 1916, with kafir at Lawton, and with milo at Big Spring]

The same crop was grown continuously on the following plots:

- LM-R.—Disked in fall, listed in winter, leveled in spring, and planted with lister in same furrows.
- LM-S.—Fall listed, leveled in winter, and planted with lister in same furrows.



- LM-T.—Fall listed, leveled in spring, and planted with lister in same furrows.  
 LM-U.—Fall listed, harrowed in spring, and planted by splitting ridges.  
 LM-V.—Fall listed, and planted by splitting ridges.  
 LM-W.—Early spring listed, and planted in furrows without cultivation.  
 LM-X.—Listed early in spring, and planted by splitting ridges.  
 LM-Y.—Fall listed, ridges split in spring, and planted in furrows.

Y at Lawton is a duplicate of R, with manure.  
 Y at Tucumcari in 1916 was fall plowed.

#### SEED-BED PLOTS WITH WINTER WHEAT AT LAWTON

Winter wheat was grown continuously on the following plots:

- SL- 1.—Shallow late-fall plowing.  
 SL- 2.—Shallow early-fall plowing.  
 SL- 3.—Deep early-fall plowing.  
 SL- 4.—Subsoiled early-fall plowing.  
 SL- 5.—Deep early-fall plowing in the even years and on disking in the odd years.  
 SL- 6.—Disking in the even years and on deep early-fall plowing in the odd years.  
 SL- 7.—Stubble disked at seeding time.  
 SL- 8.—Stubble disked as needed to prevent the growth of weeds.  
 SL- 9.—Early-fall single listing.  
 SL-10.—Early-fall single listing, manured.

#### CULTURAL METHODS WITH COTTON AT BIG SPRING

Cotton was grown continuously on the following plots:

- Cot-1.—Spring listed, lister planted, splitting ridges.  
 Cot-2.—Spring listed, cultivated, lister planted in same furrows.  
 Cot-3.—Disked, planted with furrow openers.  
 Cot-4.—Disked, surface planted.  
 Cot-5.—Spring plowed, surface planted.  
 Cot-6.—Spring plowed, planted with furrow opener.  
 Cot-7.—Spring plowed, surface planted, cultivated twice.  
 Cot-8.—Spring plowed, surface planted, cultivated six times.  
 Cot-9.—Spring plowed, surface planted, weeds clipped with hoe.

#### CHECK PLOTS AT CERTAIN STATIONS

*North Platte.*—Check plots 1 and 2 at North Platte are continuously cropped to winter wheat on late fall plowing.

*Colby.*—Check plots 1 to 5 at Colby are continuously cropped to *feterita* on spring listing.

*Woodward.*—The check plots are distributed over the field, one in each block of 13 plots. In 1914 they were in milo on newly broken sod. In 1915 they were planted to milo, but no crop was produced. In 1916 they were planted to cowpeas. The cowpeas were killed by wind and hail, and the plots were summer-fallowed. From 1917 to 1926 they were in winter rye which was harvested for hay. The rye was on summer-fallow in 1917, on disked stubble in 1923 and 1926, on late fall plowing in 1924, and on early fall plowing the other years.

*Tucumcari.*—Four check plots are continuously cropped to listed milo, and four are continuously cropped to listed kafir. They are distributed in the north field.

*Lawton.*—Check plots 1, 2, and 3 are continuously fall plowed and cropped to cotton. Plots 1 and 2 are located end to end in the northeast corner of the field and plot 3 is located in the southeast corner.

*Big Spring.*—The 22 check plots at Big Spring were continuously cropped to milo, generally by winter plowing and surface planting, except in 1920, when they were planted to cowpeas which were disked down. Plots 1 to 6 lie end to end on the south side of the field, plots 7 to 14 through the center, and plots 15 to 22 along the north side.

#### SUMMARIES OF ROTATIONS AT THE NORTHERN GROUP OF 16 FIELD STATIONS

The tables numbered from 35 to 50, inclusive, which follow have been prepared to facilitate the study of Tables 51 to 66 which follow them. These summaries and comparisons include only the 16 northern Great Plains field stations, for the same reasons heretofore given for not including the seven southern stations in

the study of crop rotations and tillage methods, namely, that the staple crops of the southern group are not only different in kind from those in the northern group, but their relations to one another and their reactions to soil and climatic conditions and to tillage methods are also different.

The problems of crop rotation and tillage methods are quite as important in the southern as in the northern portion of the Great Plains, and it is proposed to consider them in a subsequent publication. The basic data for this purpose are contained in tables 51 to 66.

Tables 35 to 50 are all prepared on the same general plan, but the methods vary somewhat in minor details. In all of them the standards of measurement are the average yields obtained from continuous cropping and from alternate fallowing as compared with the average yields obtained from each of the staple crops grown in each rotation at each station.

The following detailed explanation of Table 35 will serve in a general way for all the tables from 35 to 50, inclusive.

The caption states that the comparisons are of the average acre yields for 11 years and that it is a summary of Tables 51 to 66, inclusive. Reference to these tables will show that the work at the Williston Field Station began in 1909 and continued until 1920. In 1909 the crops were all grown on freshly broken prairie sod, and therefore they were uniform so far as crop sequence and tillage methods are concerned. The yields for 1909 were therefore not included in the summary, although they are recorded in Table 51, thus making an 11-year period for the rotations.

Reference is also made under the caption to the descriptions of the rotations to be found on pages 32 to 43, to the detailed tables of which Table 35 is a summary, and that the climatic conditions prevailing at this station throughout the period are shown on page 9 of Miscellaneous Circular No. 81.

In column 1 of the table the numbers of the rotations used at the station are given, a total of 18 rotations.

Columns 2-21 of the table are divided into five sections—one each for spring wheat, oats, corn total, corn grain, and barley. The acre yields are all given in bushels except those for corn total, which are given in pounds covering the total dry weight of both the stover and the grain.

Each of these five sections is divided into four columns. The first column at the left in each section gives the average acre yield from each rotation for the 11-year period for the respective crops.

The mean acre yields obtained from alternate fallow and from continuous cropping, with which the differences in yields from the several rotations are compared, are shown in the headings of the paired columns 3 and 4, 7 and 8, 11 and 12, 15 and 16, and 19 and 20, respectively.

It is assumed that the yields from alternate fallowing will be more than from rotations and that those from continuous cropping will be less; such, however, is not always the case. When these relations are reversed they are indicated by an asterisk (\*) when the rotations yield higher than the alternate fallowing and by a dagger (†) when the yields from the rotations are lower than from continuous cropping. Whenever these reversals occur the figures in the columns thus affected are treated as negative values in calculating the averages.

The figures in columns 5, 9, 13, 17, and 21 are always equal to the algebraic sum of those in the pair of



columns immediately preceding, and these figures are also always equal to the difference between the yields obtained from continuous cropping and from alternate fallowing.

Taking rotation 1 as an example, it is found that the average acre yields for the 11-year period are, for continuous cropping to spring wheat 11.8 bushels (column 4) and for alternate fallowing 18.6 bushels (column 3). It is also seen that the average acre yield for the period for spring wheat in rotation 1 was 14.1 bushels (column 2). This is 4.5 bushels less than the average yields obtained from alternate fallowing, and is so entered in column 3. Subtracting 11.8 bushels, which is the average of the acre yields for the period obtained from continuous cropping, from 14.1 bushels, gives 2.3 bushels to be entered in column 4. Adding 4.5 bushels and 2.3 bushels gives 6.8 bushels for column 5, which is, of course, the same as  $3.3 + 3.5 = 6.8$ , which represents the difference between the average yields obtained from all rotations and from continuous cropping. It is also equal to  $18.6 - 11.8 = 6.8$ .

To apply the same methods to the oat yields gives  $40.6 - 30.1 = 10.5$ , which is entered in column 7; and  $30.1 - 23.6 = 6.5$ , which is placed in column 8;  $10.5 + 6.5 = 17$ , which is entered in column 9 and, of course, is the same for all the rotations— $40.6$  bushels— $23.6$  bushels = 17 bushels.

To compute in like manner the differences in yields of corn total gives 6,205 pounds—3,751 pounds = 2,454 pounds which is entered in column 11, showing a reversal in the normal relations between the yields from rotation 1 and from continuous cropping, the latter being greater instead of less than the former. Subtracting, therefore, 3,751 pounds from 4,430 pounds gives 679 pounds which is entered in column 12 and must be treated as a negative quantity, as indicated by a dagger (†). The algebraical sum of 2,454 pounds—679 pounds is 1,775 pounds which is entered in column 13.

The differences in yields of corn grain are computed in the same manner as corn total, the figure in column 16 also being negative.

This same process of computation of the differences in yields under different systems of rotations and tillage methods have been applied to each of the different rotations at each of the 16 stations where they have been practiced.

It is believed that this description will enable the reader to understand the principles upon which Tables 35 to 56 have been developed.

The reader will, however, be more interested in the use that can be made of these tables by the practical farmer, the student, and the investigator than he is in the methods of developing them. This subject is discussed on page 64 in connection with Tables 51 to 73.

#### ANALYSIS OF RESULTS AT WILLISTON, N. DAK.

TABLE 35.—Comparisons of average acre yields from 18 rotations, with corresponding yields from alternate fallow and from continuous cropping at Williston, N. Dak., for 11 years, 1910 to 1920

[Summary of Table 51 (p. 64). For description of rotations see pages 32-43. For climatic conditions 1909 to 1920, see page 9, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow. A dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No. | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 18.6) | Rotation yields more than from continuous cropping (mean 11.8) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 40.6) | Rotation yields more than from continuous cropping (mean 23.6) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 6,205) | Rotation yields more than from continuous cropping (mean 4,430) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 18.9) | Rotation yields more than from continuous cropping (mean 15.7) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 28.7) | Rotation yields more than from continuous cropping (mean 13.6) | Alternate fallow yields more than from continuous cropping |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                              | 11   | 12  | 13   | 14                               | 15  | 16   | 17   | 18                               | 19  | 20   | 21   |
| 1.....       | 14.1                             | 4.5   | 2.3  | 6.8  | 30.1                             | 10.5  | 6.5  | 17   | 3,751                           | 2,454  | †679  | 1,775  | 12.7                             | 6.2   | †3.0   | 3.2  | .....                            | .....   | .....  | .....  |
| 2.....       | 14.6                             | 4.0   | 2.8  | 6.8  | 32.0                             | 8.6   | 8.4  | 17   | 4,267                           | 1,938  | †163  | 1,775  | 13.7                             | 5.2   | †2.2   | 3.2  | .....                            | .....   | .....  | .....  |
| 3.....       | 13.3                             | 5.3   | 1.3  | 6.8  | 29.9                             | 10.7  | 6.3  | 17   | 3,279                           | 2,926  | †1,151  | 1,775  | 11.8                             | 7.1   | †3.9   | 3.2  | .....                            | .....   | .....  | .....  |
| 4.....       | 17.3                             | 1.3   | 5.5  | 6.8  | 43.0                             | *2.4  | 19.4   | 17   | 4,481                           | 1,724  | 51  | 1,775  | 15.4                             | 3.5   | †3.3   | 3.2  | .....                            | .....   | .....  | .....  |
| 5.....       | 16.4                             | 2.2   | 4.6  | 6.8  | 28.4                             | 12.2  | 4.8  | 17   | .....                           | .....  | .....   | .....  | .....                            | .....   | .....  | .....  | .....                            | .....   | .....  | .....  |
| 6.....       | .....                            | .....   | .....  | 6.8  | 34.1                             | 6.5   | 10.5   | 17   | 3,420                           | 2,785  | †1,010  | 1,775  | 13.6                             | 5.3   | †2.1   | 3.2  | 23.8                             | 4.9   | 10.8   | 15.7   |
| 7.....       | .....                            | .....   | .....  | 6.8  | 30.5                             | 10.1  | 6.9  | 17   | 3,998                           | 2,207  | †432  | 1,775  | 13.8                             | 5.1   | †1.9   | 3.2  | 15.3                             | 13.4  | 2.3  | 15.7   |
| 8.....       | 13.6                             | 5.0   | 1.8  | 6.8  | 44.8                             | *4.2  | 21.2   | 17   | .....                           | .....  | .....   | .....  | .....                            | .....   | .....  | .....  | .....                            | .....   | .....  | .....  |
| 9.....       | 15.3                             | 3.3   | 3.5  | 6.8  | 39.9                             | .....   | 16.3   | 17   | 4,234                           | 1,971  | †196  | 1,775  | 14.2                             | 4.7   | †1.5   | 3.2  | .....                            | .....   | .....  | .....  |
| 10.....      | 13.8                             | 4.8   | 2.0  | 6.8  | 29.3                             | 11.3  | 5.7  | 17   | 3,306                           | 2,899  | †1,124  | 1,775  | 11.1                             | 7.8   | †4.6   | 3.2  | .....                            | .....   | .....  | .....  |
| 11.....      | 14.7                             | 3.9   | 2.9  | 6.8  | 22.1                             | 18.5  | †1.5   | 17   | 3,568                           | 2,637  | †862  | 1,775  | 11.3                             | 7.6   | †4.4   | 3.2  | .....                            | .....   | .....  | .....  |
| 12.....      | 14.3                             | 4.3   | 2.5  | 6.8  | 33.6                             | 7.0   | 10.0   | 17   | 3,772                           | 2,433  | †658  | 1,775  | 11.8                             | 7.1   | †3.9   | 3.2  | .....                            | .....   | .....  | .....  |
| 13.....      | 17.0                             | 1.6   | 5.2  | 6.8  | 32.0                             | 8.6   | 8.4  | 17   | 4,029                           | 2,176  | †401  | 1,775  | 13.1                             | 5.8   | †2.6   | 3.2  | .....                            | .....   | .....  | .....  |
| 14.....      | 15.0                             | 3.6   | 3.2  | 6.8  | 35.3                             | 5.3   | 11.7   | 17   | 4,158                           | 2,047  | †272  | 1,775  | 13.2                             | 5.7   | †2.5   | 3.2  | .....                            | .....   | .....  | .....  |
| 15.....      | 16.5                             | 2.1   | 4.7  | 6.8  | 33.5                             | 7.1   | 9.9  | 17   | 4,073                           | 2,132  | †357  | 1,775  | 13.5                             | 5.4   | †2.2   | 3.2  | .....                            | .....   | .....  | .....  |
| 16.....      | 19.1                             | *.5   | 7.3  | 6.8  | 25.3                             | 15.3  | 1.7  | 17   | 4,082                           | 2,123  | †348  | 1,775  | 14.3                             | 4.6   | †1.4   | 3.2  | .....                            | .....   | .....  | .....  |
| 17.....      | 15.9                             | 2.7   | 4.1  | 6.8  | 34.5                             | 6.1   | 10.9   | 17   | 4,110                           | 2,095  | †320  | 1,775  | 12.9                             | 6.0   | †2.8   | 3.2  | .....                            | .....   | .....  | .....  |
| 18.....      | 13.7                             | 4.9   | 1.9  | 6.8  | 30.7                             | 9.9   | 7.1  | 17   | 3,550                           | 2,655  | †880  | 1,775  | 12.3                             | 6.6   | †3.4   | 3.2  | .....                            | .....   | .....  | .....  |
| Average..... | 15.3                             | 3.3   | 3.5  | 6.8  | 32.7                             | 7.9   | 9.1  | 17   | 3,880                           | 2,325  | †550  | 1,775  | 13.0                             | 5.9   | †2.7   | 3.2  | 19.6                             | 9.1   | 6.6  | 15.7   |



### ANALYSIS OF RESULTS AT ASSINNIBOINE, MONT.

TABLE 36.—Comparisons of average acre yields from 72 rotations, with corresponding yields from alternate fallow and from continuous cropping, at Assiniboine, Mont., for 10 years, 1917 to 1926

[Summary of Table 52 (p. 66). For descriptions of rotations, see pages 32-43. Replicated rotations are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1916 to 1924, see page 10, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow; a dagger (†) indicates yields from rotations which are less than those from continuous cropping. In rotations 14 to 19, 31, 32, 71, and 72, winter wheat was grown from 1916 to 1923, inclusive, and spring wheat in 1924, 1925, and 1926]

| Rotation No. | Winter wheat                     |   |   |  | Spring wheat                     |   |   |  | Oats                             |   |  |  | Corn total                       |   |  |  | Corn grain                       |   |   |  | Barley                           |   |   |  | Flax                             |  |   |  |
|--------------|----------------------------------|---|---|--|----------------------------------|---|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|---|---|--|----------------------------------|---|---|--|----------------------------------|--|---|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (pounds)                          |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |   |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 10.1) | Rotation yields more than from continuous cropping (mean 2.7) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 13.2) | Rotation yields more than from continuous cropping (mean 6.7) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 21.4) | Rotation yields more than from continuous cropping (mean 16.0) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 4.47) | Rotation yields more than from continuous cropping (mean 2.96) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 12.2) | Rotation yields more than from continuous cropping (mean 8.3) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 22.7) | Rotation yields more than from continuous cropping (mean 9.9) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 1.3) | Rotation yields more than from continuous cropping (mean 0.7) | Alternate fallow yields more than from continuous cropping |
|              |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 1            | 2                                | 3   | 4   | 5  | 6                                | 7   | 8   | 9  | 10                               | 11  | 12   | 13   | 14                               | 15  | 16   | 17   | 18                               | 19  | 20  | 21   | 22                               | 23  | 24  | 25   | 26                               | 27   | 28  | 29   |
| 1a           |                                  |   |   |  | 10.7                             | 2.5   | 4.0   | 6.5  | 14.7                             | 14.7  | 11.3   | 13.4   | 2,331                            | 2,144   | 1,633  | 1,511  | 6.5                              | 5.7   | *1.8  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 1b           |                                  |   |   |  | 9.1                              | 4.1   | 2.4   | 6.5  | 15.2                             | 14.2  | 1.8  | 13.4   | 2,298                            | 2,177   | 1,666  | 1,511  | 5.2                              | 7.0   | *3.1  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 2a           |                                  |   |   |  | 11.6                             | 1.6   | 4.9   | 6.5  | 17.3                             | 12.1  | 6.9  | 13.4   | 2,796                            | 1,679   | 1,688  | 1,511  | 7.9                              | 4.3   | *.4   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 2b           |                                  |   |   |  | 10.0                             | 3.2   | 3.3   | 6.5  | 17.3                             | 12.1  | 1.3  | 13.4   | 2,527                            | 1,948   | 1,437  | 1,511  | 6.2                              | 6.0   | *.1   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 3a           |                                  |   |   |  | 7.0                              | 6.2   | 6.3   | 6.5  | 12.0                             | 17.4  | 4.0  | 13.4   | 2,765                            | 1,710   | 1,199  | 1,511  | 8.2                              | 4.2   | *.3   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 3b           |                                  |   |   |  | 13.0                             | 4.5   | 2.0   | 6.5  | 22.7                             | 6.7   | 6.7  | 13.4   | 2,466                            | 2,000   | 1,498  | 1,511  | 5.1                              | 4.1   | *.2   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 4a           |                                  |   |   |  | 8.7                              | 4.5   | 2.0   | 6.5  | 22.7                             | 6.7   | 6.7  | 13.4   | 2,494                            | 1,981   | 1,470  | 1,511  | 8.1                              | 4.1   | *.2   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 4b           |                                  |   |   |  | 9.5                              | 3.7   | 2.8   | 6.5  | 24.3                             | 5.1   | 8.2  | 13.4   | 2,775                            | 1,700   | 1,189  | 1,511  | 8.0                              | 4.2   | *.3   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 5a           |                                  |   |   |  | 13.5                             | *.3   | 6.8   | 6.5  | 12.0                             | 17.4  | 4.0  | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 5b           |                                  |   |   |  | 13.4                             | *.2   | 6.7   | 6.5  | 21.7                             | 7.7   | 5.7  | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 6a           |                                  |   |   |  |                                  |   |   |  | 15.8                             | 13.6  | 1.2  | 13.4   | 2,948                            | 1,527   | 1,116  | 1,511  | 8.1                              | 4.1   | *.2   | 3.9  | 16.2                             | 6.5   | 6.3   | 12.8   |                                  |  |   |  |
| 6b           |                                  |   |   |  |                                  |   |   |  | 20.1                             | 9.3   | 4.1  | 13.4   | 2,537                            | 1,938   | 1,427  | 1,511  | 7.0                              | 5.2   | *1.3  | 3.9  | 18.5                             | 4.2   | 8.6   | 12.8   |                                  |  |   |  |
| 7a           |                                  |   |   |  |                                  |   |   |  | 22.7                             | 6.7   | 6.7  | 13.4   | 2,951                            | 1,524   | 1,113  | 1,511  | 8.0                              | 4.2   | *.3   | 3.9  | 17.0                             | 5.7   | 7.1   | 12.8   |                                  |  |   |  |
| 7b           |                                  |   |   |  |                                  |   |   |  | 23.7                             | 5.7   | 7.7  | 13.4   | 2,899                            | 1,576   | 1,165  | 1,511  | 6.4                              | 5.8   | *1.9  | 3.9  | 15.8                             | 6.9   | 5.9   | 12.8   |                                  |  |   |  |
| 8a           |                                  |   |   |  | 7.8                              | 5.4   | 1.1   | 6.5  | 30.1                             | *.7   | 14.1   | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 8b           |                                  |   |   |  | 6.5                              | 6.7   | 1.2   | 6.5  | 24.9                             | 4.5   | 8.9  | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 9a           |                                  |   |   |  | 11.1                             | 2.1   | 4.4   | 6.5  | 20.1                             | 9.3   | 4.1  | 13.4   | 2,870                            | 1,605   | 1,194  | 1,511  | 7.6                              | 4.6   | *.7   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 9b           |                                  |   |   |  | 8.7                              | 4.5   | 2.0   | 6.5  | 16.2                             | 13.2  | .2   | 13.4   | 2,350                            | 2,125   | 1,614  | 1,511  | 5.1                              | 7.1   | *3.2  | 2.9  |                                  |   |   |  |                                  |  |   |  |
| 13           |                                  |   |   |  | 11.4                             | 1.8   | 4.7   | 6.5  | 21.5                             | 7.9   | 5.5  | 13.4   | 2,767                            | 1,708   | 1,197  | 1,511  | 7.2                              | 5.0   | *1.1  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 14           | 4.8                              | 5.3   | 2.1   | 7.4  | 11.3                             | 1.9   | 4.6   | 6.5  | 19.3                             | 10.1  | 3.3  | 13.4   | 2,390                            | 2,085   | 1,574  | 1,511  | 5.1                              | 7.1   | *3.2  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 15           | 2.2                              | 7.9   | 1.5   | 7.4  | 13.3                             | *.1   | 6.6   | 6.5  | 16.9                             | 12.5  | .9   | 13.4   | 2,219                            | 2,256   | 1,745  | 1,511  | 4.0                              | 8.2   | *4.3  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 16           | 5.1                              | 5.0   | 2.4   | 7.4  | 12.7                             | .5  | 6.0   | 6.5  | 16.5                             | 12.9  | .5   | 13.4   | 2,391                            | 2,084   | 1,573  | 1,511  | 5.1                              | 7.1   | *3.2  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 17           | 4.5                              | 5.6   | 1.8   | 7.4  | 9.5                              | 3.7   | 2.8   | 6.5  | 18.8                             | 10.6  | 2.8  | 13.4   | 2,331                            | 2,144   | 1,633  | 1,511  | 4.4                              | 7.8   | *3.9  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 18           | 8.1                              | 2.0   | 5.4   | 7.4  | 17.0                             | *3.8  | 10.3  | 6.5  | 20.1                             | 9.3   | 4.1  | 13.4   | 2,306                            | 2,169   | 1,658  | 1,511  | 4.9                              | 7.3   | *3.4  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 19           | 5.3                              | 4.8   | 2.6   | 7.4  | 15.0                             | *1.8  | 8.3   | 6.5  | 28.3                             | 1.1   | 12.3   | 13.4   | 2,638                            | 1,837   | 1,326  | 1,511  | 5.5                              | 6.7   | *2.8  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 31           | 4.5                              | 5.6   | 1.8   | 7.4  | 11.2                             | 2.0   | 4.5   | 6.5  | 17.8                             | 11.6  | 1.8  | 13.4   | 2,526                            | 1,949   | 1,438  | 1,511  | 4.8                              | 7.4   | *3.5  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 32           | 3.9                              | 6.2   | 1.2   | 7.4  | 13.6                             | *.4   | 6.9   | 6.5  | 17.8                             | 11.6  | 1.8  | 13.4   | 2,363                            | 2,112   | 1,601  | 1,511  | 4.1                              | 8.1   | *4.2  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 40           |                                  |   |   |  |                                  |   |   |  | 21.1                             | 8.3   | 5.1  | 13.4   | 2,189                            | 2,286   | 1,775  | 1,511  | 6.5                              | 5.7   | *1.8  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 41           |                                  |   |   |  | 10.7                             | 2.5   | 4.0   | 6.5  | 12.7                             | 16.7  | 13.3   | 13.4   | 2,700                            | 1,775   | 1,264  | 1,511  | 6.3                              | 5.9   | *2.0  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 42           |                                  |   |   |  | 10.1                             | 3.1   | 3.4   | 6.5  | 14.3                             | 15.1  | 11.7   | 13.4   | 2,433                            | 2,042   | 1,531  | 1,511  | 5.6                              | 6.6   | *2.7  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 49           |                                  |   |   |  |                                  | 7.6   | 5.6   | .9   | 6.5                              |   |  |  | 1,937                            | 2,538   | 1,027  | 1,511  | 5.2                              | 7.0   | *3.1  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 53           | 4.7                              |   |   | 2.0  | 7.4                              | 12.0  | 1.2   | 5.3  | 6.5                              |   |  |  | 2,483                            | 1,992   | 1,481  | 1,511  | 5.5                              | 6.7   | *2.8  | 3.9  | 14.8                             | 7.9   | 4.9   | 12.8   |                                  |  |   |  |
| 54           | 5.1                              | 5.0   | 2.4   | 7.4  | 13.3                             | *.1   | 6.6   | 6.5  |                                  |   |  |  | 2,471                            | 2,004   | 1,493  | 1,511  | 5.0                              | 7.2   | *3.3  | 3.9  | 13.0                             | 9.7   | 3.1   | 12.8   |                                  |  |   |  |
| 60           |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,042                            | 2,433   | 1,922  | 1,511  | 5.0                              | 7.2   | *3.3  | 3.9  | 12.7                             | 10.0  | 2.8   | 12.8   |                                  |  |   |  |
| 68           |                                  |   |   |  | 13.1                             | .1  | 6.4   | 6.5  | 18.4                             | 11.0  | 2.4  | 13.4   | 3,069                            | 1,406   | 105  | 1,511  | 7.5                              | 4.7   | *.8   | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 69           |                                  |   |   |  | 11.6                             | 1.6   | 4.9   | 6.5  | 14.5                             | 14.9  | 11.5   | 13.4   | 2,755                            | 1,720   | 1,209  | 1,511  | 6.4                              | 5.8   | *1.9  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 70           |                                  |   |   |  | 12.2                             | 1.0   | 5.5   | 6.5  | 15.5                             | 13.9  | 1.5  | 13.4   | 2,726                            | 1,749   | 1,238  | 1,511  | 6.0                              | 6.2   | *2.3  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 71           | 5.6                              | 5.1   | 2.3   | 7.4  | 13.9                             | *.7   | 7.2   | 6.5  | 27.4                             | 2.0   | 11.4   | 13.4   | 2,227                            | 2,248   | 1,737  | 1,511  | 5.1                              | 7.1   | *3.2  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 72           | 8.3                              | 1.8   | 5.6   | 7.4  | 13.2                             | 0   | 6.5   | 6.5  | 18.2                             | 11.2  | 2.2  | 13.4   | 2,249                            | 2,226   | 1,715  | 1,511  | 5.1                              | 7.1   | *3.2  | 3.9  |                                  |   |   |  |                                  |  |   |  |
| 85           | 8.5                              | 1.6   | 5.8   | 7.4  |                                  |   |   |  |                                  |   |  |  | 2,158                            | 2,317   | 1,806  | 1,511  | 6.4                              | 5.8   | *1.9  | 3.9  | 12.6                             | 10.1  | 2.7   | 12.8   | 2.4                              | *1.1   | 1.7   | 0.6  |
| 149          | 5.7                              | 4.4   | 3.0   | 7.4  |                                  |   |   |  |                                  |   |  |  | 1,777                            | 2,698   | 1,187  | 1,511  | 4.6                              | 7.6   | *3.7  | 3.9  |                                  |   |   |  | 1.8                              | *.5  | 1.1   | .6   |
| 243a         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,307                            | 1,668   | 1,157  | 1,511  | 9.0                              | 3.2   | *.7   | 3.9  |                                  |   |   |  | 3.2                              | *1.9   | 2.5   | .6   |
| 243b         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 3,938                            | 1,537   | 974  | 1,511  | 7.6                              | 4.6   | *.7   | 3.9  |                                  |   |   |  | 1.5                              | *.2  | .8  | .6   |
| 244a         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,777                            | 1,698   | 1,187  | 1,511  | 6.9                              | 5.3   | *1.4  | 3.9  |                                  |   |   |  | 1.3                              | 0  | .6  | .6   |
| 244b         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,894                            | 1,581   | 1,170  | 1,511  | 6.4                              | 5.8   | *1.9  | 3.9  |                                  |   |   |  | 2.4                              | *1.1   | 1.7   | .6   |
| 245a         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,538                            | 1,937   | 1,426  | 1,511  | 6.2                              | 6.0   | *2.1  | 3.9  |                                  |   |   |  | 3.5                              | *2.2   | 2.8   | .6   |
| 245b         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 3,449                            | 1,026   | 485  | 1,511  | 7.4                              | 4.8   | *.9   | 3.9  |                                  |   |   |  | 2.2                              | *.9  | 1.1   | .6   |
| 246a         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 2,931                            | 1,544   | 1,133  | 1,511  | 7.7                              | 6.5   | *2.6  | 3.9  |                                  |   |   |  | 1.8                              | *.5  | 1.1   | .6   |
| 246b         |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  | 3,388                            | 1,087   | 424  | 1,511  | 6.4                              | 5.8   | *1.9  | 3.9  |                                  |   |   |  | 3.0                              | *1.7   | 2.3   | .6   |
| 247a         |                                  |   |   |  | 10.7                             | 2.5   | 4.0   | 6.5  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  | 2.6                              | *1.3   | 1.9   | .6   |
| 247b         |                                  |   |   |  | 9.6                              | 3.6   | 2.9   | 6.5  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  | 3.0                              | *1.7   | 2.3   | .6   |
| 248a         |                                  |   |   |  |                                  |   |   |  | 20.5                             | 8.9   | 4.5  | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  | 3.0                              | *1.7   | 2.3   | .6   |
| 248b         |                                  |   |   |  |                                  |   |   |  | 21.7                             | 7.7   | 5.7  | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  | 2.0                              | *.7  | 1.3   | .6   |
| 568a         | 10.2                             | *.1   | 7.5   | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 568b         | 2.2                              | 7.9   | 1.5   | 7.4  | 16.7                             | *3.5  | 10.0  | 6.5  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 570          | 2.9                              | 7.2   | .2  | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 571          | 2.5                              | 7.6   | 1.2   | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 572a         | 3.4                              | 6.7   | .7  | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 572b         | 1.9                              | 8.2   | 1.8   | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 573          | 3.2                              | 6.9   | .5  | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 573a         | 2.4                              | 7.7   | 1.3   | 7.4  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 576          |                                  |   |   |  |                                  |   |   |  | 12.5                             | 16.9  | 13.5   | 13.4   |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |
| 577          |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  |                                  |   |  |  |                                  |   |   |  |                                  |   |   |  |                                  |  |   |  |

### ANALYSIS OF RESULTS AT MOCCASIN, MONT.

TABLE 37.—*Comparisons of average acre yields from 29 rotations, with corresponding yields from alternate fallow and from continuous cropping, at Moccasin, Mont. (field A), for 18 years, 1909 to 1926*

[Summary of Table 53 (p. 71). For descriptions of rotations, see pages 32-43. For climatic conditions, 1908 to 1924, see page 11, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping, a double dagger (‡) indicates yields from continuous cropping which are more than those from alternate fallow (column 17).]

| Rotation No.<br>or plot | Winter wheat                     |   |  |  | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn, total                     |  |   |  | Barley                           |   |  |  | Flax                             |  |   |  |    |
|-------------------------|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|--|---|--|----|
|                         | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |   |  |    |
|                         |                                  | Rotation yields less than from alternate fallow (mean 20.9) | Rotation yields more than from continuous cropping (mean 11.3) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 18.9) | Rotation yields more than from continuous cropping (mean 11.2) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 47.1) | Rotation yields more than from continuous cropping (mean 34.1) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 4,863) | Rotation yields more than from continuous cropping (mean 5,199) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 27.8) | Rotation yields more than from continuous cropping (mean 17.9) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 8.1) | Rotation yields more than from continuous cropping (mean 7.4) | Alternate fallow yields more than from continuous cropping |    |
|                         |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |  |   |  |    |
| 1                       | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                               | 11  | 12   | 13   | 14                              | 15   | 16  | 17   | 18                               | 19  | 20   | 21   | 22                               | 23   | 24  | 25   |    |
| 1                       |                                  |   |  |  | 19.5                             | *0.6  | 5.3  | 4.7  | 33.9                             | 13.2  | +0.2   | 13.0   | 4,447                           | 416  | +752  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 2                       |                                  |   |  |  | 18.3                             | .6  | 4.1  | 4.7  | 36.7                             | 10.4  | -2.6   | 13.0   | 4,936                           | *73  | -263  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 3                       |                                  |   |  |  | 18.1                             | .8  | 3.9  | 4.7  | 34.2                             | 12.9  | .1   | 13.0   | 4,375                           | 488  | +24   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 4                       |                                  |   |  |  | 16.9                             | 2.0   | 2.7  | 4.7  | 40.8                             | 6.3   | 6.7  | 13.0   | 4,468                           | 395  | +731  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 5                       |                                  |   |  |  | 20.8                             | *1.9  | 6.6  | 4.7  | 34.2                             | 12.9  | .1   | 13.0   |                                 |  |   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 6                       |                                  |   |  |  |                                  |   |  |  | 34.0                             | 13.1  | +1.1   | 13.0   | 4,008                           | 855  | +1,191  | 1336   | 22.9                             |   |  |  |                                  |  |   |  |    |
| 7                       |                                  |   |  |  |                                  |   |  |  | 38.2                             | 8.9   | 4.1  | 13.0   | 4,994                           | *131   | -1205   | 1336   | 21.3                             | 4.9   | 5.0  | 9.9  |                                  |  |   |  |    |
| 8                       |                                  |   |  |  | 18.8                             | .1  | 4.6  | 4.7  | 49.3                             | *2.2  | 15.2   | 13.0   |                                 |  |   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 9                       |                                  |   |  |  | 16.8                             | 2.1   | 2.6  | 4.7  | 37.1                             | 10.0  | 3.0  | 13.0   | 4,769                           | 94   | +430  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 10                      |                                  |   |  |  | 14.3                             | 4.6   | .1   | 4.7  | 24.9                             | 22.2  | +9.2   | 13.0   | 3,859                           | 1,004  | +1,340  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 11                      |                                  |   |  |  | 19.6                             | *7  | 5.4  | 4.7  | 35.4                             | 11.7  | 1.3  | 13.0   | 4,748                           | 115  | +451  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 12                      |                                  |   |  |  | 14.0                             | 4.9   | +1.2   | 4.7  | 30.8                             | 16.3  | +3.3   | 13.0   | 4,343                           | 520  | +856  | 1336   |                                  |   |  |  | 4.4                              | 3.7  | +3.0  | 0.7  |    |
| 14                      |                                  |   |  |  | 21.8                             | *2.9  | 7.6  | 4.7  | 41.3                             | 5.8   | 7.2  | 13.0   | 4,500                           | 363  | +699  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 15                      |                                  |   |  |  | 17.7                             | 1.2   | 3.5  | 4.7  | 39.2                             | 7.9   | 5.1  | 13.0   | 4,692                           | 171  | +507  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 16                      |                                  |   |  |  | 20.8                             | *1.9  | 6.6  | 4.7  | 40.9                             | 6.2   | 6.8  | 13.0   | 4,808                           | 55   | +391  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 17                      |                                  |   |  |  | 17.2                             | 1.7   | 3.0  | 4.7  | 41.7                             | 5.4   | 7.6  | 13.0   | 4,932                           | *69  | -267  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 18                      |                                  |   |  |  | 19.6                             | *7  | 5.4  | 4.7  | 41.6                             | 5.5   | 7.5  | 13.0   | 4,919                           | *56  | -280  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 19                      |                                  |   |  |  | 18.2                             | .7  | 4.0  | 4.7  | 39.9                             | 7.2   | 5.8  | 13.0   | 4,764                           | 99   | +435  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 40                      |                                  |   |  |  |                                  |   |  |  | 41.8                             | 5.3   | 7.7  | 13.0   | 4,800                           | 63   | +399  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 41                      |                                  |   |  |  | 14.0                             | 4.9   | +1.2   | 4.7  | 24.8                             | 22.3  | +9.3   | 13.0   | 4,035                           | 828  | +1,164  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 42                      |                                  |   |  |  | 18.3                             | .6  | 4.1  | 4.7  | 26.2                             | 20.9  | +7.9   | 13.0   | 4,492                           | 371  | +707  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 43                      |                                  |   |  |  | 17.4                             | 1.5   | 3.2  | 4.7  | 37.1                             | 10.0  | 3.0  | 13.0   | 4,256                           | 607  | +943  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 44                      |                                  |   |  |  |                                  |   |  |  | 43.5                             | 3.6   | 9.4  | 13.0   | 4,828                           | 35   | +371  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 45                      |                                  |   |  |  |                                  |   |  |  | 42.8                             | 4.3   | 8.7  | 13.0   | 4,443                           | 420  | +756  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 46                      |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  | 4,333                           | 530  | +866  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 49                      |                                  |   |  |  | 17.9                             | 1.0   | 3.7  | 4.7  | 34.7                             | 12.4  | .6   | 13.0   |                                 |  |   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 64                      |                                  | 16.9  | 4.0  | 5.6  | 9.6                              |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |  |   |  |    |
| 67                      |                                  |   |  |  | 20.4                             | *1.5  | 6.2  | 4.7  | 47.6                             | *5  | 13.5   | 13.0   | 5,700                           | *837   | 501   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 68                      |                                  |   |  |  | 21.0                             | *2.1  | 6.8  | 4.7  | 37.7                             | 9.4   | 3.6  | 13.0   | 4,903                           | *40  | +296  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| 305                     |                                  |   |  |  | 19.5                             | *.6   | 5.3  | 4.7  | 35.5                             | 11.6  | 1.4  | 13.0   |                                 |  |   | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| Average...              |                                  | 16.9  | 4.0  | 5.6  | 9.6                              | 18.3  | .6   | 4.1  | 4.7                              | 37.4  | 9.7  | 3.3  | 13.0                            | 4,614  | 249   | +585   | 1336                             | 22.1  | 5.7  | 4.2  | 9.9                              | 4.4  | 3.7   | +3.0   | .7 |
| F...                    |                                  | 11.3  | 9.6  | 0  | 9.6                              | 14.5  | 4.4  | .3   | 4.7                              | 30.9  | 16.2   | +3.2   | 13.0                            | 5,214  | *351  | 15   | 1336                             | 18.6  | 9.2  | .7   | 9.9                              | 6.9  | 1.2   | +5   | .7 |
| G...                    |                                  | 10.0  | 10.9   | +1.3   | 9.6                              | 13.1  | 5.8  | +1.1   | 4.7                              | 29.6  | 17.5   | +4.5   | 13.0                            | 4,862  | 1   | +337   | 1336                             | 17.7  | 10.1   | +1.2   | 9.9                              | 6.8  | 1.3   | +6   | .7 |
|                         |                                  |   |  |  | 15.3                             | 3.6   | 1.1  | 4.7  |                                  |   |  |  | 3,714                           | 1,149  | +1,485  | 1336   |                                  |   |  |  |                                  |  |   |  |    |
| Average...              |                                  | 10.7  | 10.2   | +6   | 9.6                              | 14.3  | 4.6  | .1   | 4.7                              | 30.3  | 16.8   | +3.8   | 13.0                            | 4,597  | 266   | +602   | 1336                             | 18.2  | 9.6  | .3   | 9.9                              | 6.9  | 1.2   | +5   | .7 |



TABLE 38.—Comparisons of average acre yields from 60 rotations, with corresponding yields from alternate fallow and from continuous cropping, at Huntley, Mont., for 14 years, 1913 to 1926

Summary of Table 54 (p. 76). For descriptions of rotations, see pages 32-43. For climatic conditions 1912 to 1924, see page 18, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping.

| Rotation No.<br>or plot | Winter wheat                     |  |   |   | Spring wheat                     |  |   |   | Oats                             |  |   |   | Corn total                      |  |  |   | Corn grain                       |  |   |   | Barley                           |  |   |   | Flax                             |   |  |   |
|-------------------------|----------------------------------|--|---|---|----------------------------------|--|---|---|----------------------------------|--|---|---|---------------------------------|--|--|---|----------------------------------|--|---|---|----------------------------------|--|---|---|----------------------------------|---|--|---|
|                         | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (pounds) | Difference in<br>acre yields<br>(pounds)                         |  |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                       |  |   |
|                         |                                  | Rotation yields less than from alter-<br>nate fallow (mean 25.4) | Rotation yields more than from con-<br>tinuous cropping (mean 11.8) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 13.1) | Rotation yields more than from con-<br>tinuous cropping (mean 10.9) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 39.8) | Rotation yields more than from con-<br>tinuous cropping (mean 24.6) | Alternate fallow yields more than<br>from continuous cropping |                                 | Rotation yields less than from alter-<br>nate fallow (mean 4.75) | Rotation yields more than from con-<br>tinuous cropping (mean 2.792) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 28.0) | Rotation yields more than from con-<br>tinuous cropping (mean 16.2) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 20.3) | Rotation yields more than from con-<br>tinuous cropping (mean 11.5) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 9.7) | Rotation yields more than from con-<br>tinuous cropping (mean 6.3) | Alternate fallow yields more than<br>from continuous cropping |
|                         |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 1                       | 2                                | 3  | 4   | 5   | 6                                | 7  | 8   | 9   | 10                               | 11   | 12  | 13  | 14                              | 15   | 16   | 17  | 18                               | 19   | 20  | 21  | 22                               | 23   | 24  | 25  | 26                               | 27  | 28   | 29  |
| 1.....                  |                                  |  |   |   | 15.9                             | *0.8   | 5.9   | 5.1   | 26.9                             | 12.9   | 2.3   | 15.2  | 2,922                           | 1,553  | 130  | 1,683   | 16.1                             | 11.9   | +0.1  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 2.....                  |                                  |  |   |   | 14.6                             | .5   | 4.6   | 5.1   | 29.1                             | 10.7   | 4.5   | 15.2  | 2,969                           | 1,506  | 177  | 1,683   | 18.1                             | 9.9  | 1.9   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 3.....                  |                                  |  |   |   | 14.0                             | 1.1  | 4.0   | 5.1   | 27.8                             | 12.0   | 3.2   | 15.2  | 2,742                           | 1,733  | +50  | 1,683   | 16.2                             | 11.8   | 0   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 4.....                  |                                  |  |   |   | 13.3                             | 1.8  | 3.3   | 5.1   | 34.3                             | 5.5  | 9.7   | 15.2  | 2,741                           | 1,734  | +51  | 1,683   | 16.6                             | 11.4   | .4  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 5.....                  |                                  |  |   |   | 23.5                             | *8.4   | 13.5  | 5.1   | 29.2                             | 10.6   | 4.6   | 15.2  |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 6.....                  |                                  |  |   |   |                                  |  |   |   | 30.6                             | 9.2  | 6.0   | 15.2  | 2,814                           | 1,661  | 22   | 1,683   | 17.2                             | 10.8   | 1.0   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 7.....                  |                                  |  |   |   |                                  |  |   |   | 32.7                             | 7.1  | 8.1   | 15.2  | 2,930                           | 1,545  | 138  | 1,683   | 18.7                             | 9.3  | 2.5   | 11.8  | 20.4                             | *0.1   | 8.9   | 8.8   |                                  |   |  |   |
| 8.....                  |                                  |  |   |   | 14.3                             | .8   | 4.3   | 5.1   | 47.3                             | *7.5   | 22.7  | 15.2  |                                 |  |  |   |                                  |  |   |   | 15.9                             | 4.4  | 4.4   | 8.8   |                                  |   |  |   |
| 9.....                  |                                  |  |   |   | 11.4                             | 3.7  | 1.4   | 5.1   | 31.4                             | 8.4  | 6.8   | 15.2  | 2,769                           | 1,706  | +23  | 1,683   | 16.5                             | 11.5   | .3  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 10.....                 |                                  |  |   |   | 16.2                             | *1.1   | 6.2   | 5.1   | 26.1                             | 13.7   | 1.5   | 15.2  | 3,221                           | 1,254  | 429  | 1,683   | 18.4                             | 9.6  | 2.2   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 11.....                 |                                  |  |   |   | 16.4                             | *1.3   | 6.4   | 5.1   | 37.9                             | 1.9  | 13.3  | 15.2  | 3,171                           | 1,304  | 379  | 1,683   | 19.2                             | 8.8  | 3.0   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 12.....                 |                                  |  |   |   | 17.1                             | *2.0   | 7.1   | 5.1   | 33.7                             | 6.1  | 9.1   | 15.2  | 3,007                           | 1,468  | 215  | 1,683   | 18.5                             | 9.5  | 2.3   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 13.....                 |                                  |  |   |   | 16.0                             | *.9  | 6.0   | 5.1   | 41.4                             | *1.6   | 16.8  | 15.2  | 3,099                           | 1,376  | 307  | 1,683   | 18.7                             | 9.3  | 2.5   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 14.....                 |                                  |  |   |   | 19.6                             | *4.5   | 9.6   | 5.1   | 32.3                             | 7.5  | 7.7   | 15.2  | 2,967                           | 1,508  | 175  | 1,683   | 17.6                             | 10.4   | 1.4   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 15.....                 |                                  |  |   |   | 21.1                             | *6.0   | 11.1  | 5.1   | 33.6                             | 6.2  | 9.0   | 15.2  | 3,131                           | 1,344  | 339  | 1,683   | 18.9                             | 9.1  | 2.7   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 16.....                 |                                  |  |   |   | 16.7                             | *1.6   | 6.7   | 5.1   | 50.6                             | *10.8  | 26.0  | 15.2  | 3,511                           | 96   | 719  | 1,683   | 20.9                             | 7.1  | 4.7   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 17.....                 |                                  |  |   |   | 14.3                             | .8   | 4.3   | 5.1   | 34.6                             | 5.2  | 10.0  | 15.2  | 3,339                           | 1,136  | 547  | 1,683   | 19.4                             | 8.6  | 3.2   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 18.....                 |                                  |  |   |   | 15.1                             | 0  | 5.1   | 5.1   | 31.1                             | 8.7  | 6.5   | 15.2  | 3,233                           | 1,242  | 441  | 1,683   | 17.4                             | 10.6   | 1.2   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 19.....                 | 23.2                             | 2.2  | 11.4  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 20.....                 |                                  |  |   |   | 19.6                             | *3.9   | 9.0   | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 21.....                 |                                  |  |   |   | 16.8                             | *1.7   | 6.8   | 5.1   | 27.0                             | 12.8   | 2.4   | 15.2  | 2,876                           | 1,599  | 84   | 1,683   | 17.1                             | 10.9   | +1.9  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 22.....                 |                                  |  |   |   | 13.5                             | 1.6  | 3.5   | 5.1   | 25.9                             | 13.9   | 1.3   | 15.2  | 2,655                           | 1,820  | +137   | 1,683   | 12.4                             | 15.6   | +3.8  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 23.....                 |                                  |  |   |   | 15.0                             | .1   | 5.0   | 5.1   |                                  |  |   |   | 2,946                           | 1,523  | 154  | 1,683   | 18.0                             | 10.0   | 1.8   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 24.....                 | 17.7                             | 7.7  | 5.9   | 13.6  |                                  |  |   |   |                                  |  |   |   | 2,706                           | 1,769  | 186  | 1,683   | 16.7                             | 11.3   | .5  | 11.8  | 17.8                             | 2.5  | 6.3   | 8.8   |                                  |   |  |   |
| 25.....                 | 18.7                             | 7.2  | 6.4   | 13.6  |                                  |  |   |   |                                  |  |   |   | 3,028                           | 1,447  | 236  | 1,683   | 18.4                             | 9.6  | 2.2   | 11.8  | 22.4                             | *2.1   | 10.9  | 8.8   |                                  |   |  |   |
| 26.....                 | 27.2                             | *1.8   | 15.4  | 13.6  |                                  |  |   |   |                                  |  |   |   | 2,906                           | 1,569  | 114  | 1,683   | 17.0                             | 10.3   | 1.5   | 11.8  | 23.7                             | *3.4   | 12.2  | 8.8   |                                  |   |  |   |
| 27.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   | 3,124                           | 1,351  | 332  | 1,683   | 17.0                             | 10.1   | 1.7   | 11.8  | 21.6                             | *1.3   | 10.1  | 8.8   |                                  |   |  |   |
| 28.....                 |                                  |  |   |   | 15.7                             | *.6  | 5.7   | 5.1   | 29.4                             | 10.4   | 4.8   | 15.2  | 3,558                           | 917  | 766  | 1,683   | 17.7                             | 10.3   | 1.5   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 29.....                 |                                  |  |   |   | 14.7                             | 4  | 4.7   | 5.1   | 39.5                             | 3  | 14.9  | 15.2  | 3,773                           | 702  | 981  | 1,683   | 21.4                             | 6.6  | 5.2   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 30.....                 |                                  |  |   |   | 11.7                             | 3.4  | 1.7   | 5.1   | 27.5                             | 12.3   | 2.9   | 15.2  | 3,775                           | 700  | 983  | 1,683   | 15.9                             | 12.1   | +1.3  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 31.....                 | 25.2                             | 2  | 13.4  | 13.6  |                                  |  |   |   |                                  |  |   |   | 4,442                           | 331  | 650  | 1,683   | 24.3                             | 3.7  | 8.1   | 11.8  | 17.3                             | 3.0  | 5.8   | 8.8   | 8.4                              | 1.3   | 2.1  | 3.4   |
| 32.....                 | 20.5                             | 4.9  | 8.7   | 13.6  |                                  |  |   |   |                                  |  |   |   | 2,744                           | 1,731  | 148  | 1,683   | 15.1                             | 12.9   | 1.1   | 11.8  | 16.7                             | 3.6  | 5.2   | 8.8   |                                  |   |  |   |
| 33.....                 | 19.3                             | 6.1  | 7.5   | 13.6  |                                  |  |   |   | 37.5                             | 2.3  | 12.9  | 15.2  | 2,972                           | 1,503  | 180  | 1,683   | 17.5                             | 10.9   | +1.3  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 34.....                 | 20.1                             | 5.3  | 8.3   | 13.6  |                                  |  |   |   | 33.1                             | 6.7  | 8.5   | 15.2  | 3,128                           | 1,347  | 336  | 1,683   | 18.8                             | 9.2  | 2.6   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 35.....                 | 19.4                             | 6.0  | 7.6   | 13.6  |                                  |  |   |   | 40.6                             | *.8  | 16.0  | 15.2  | 3,196                           | 1,279  | 404  | 1,683   | 17.6                             | 10.4   | 1.4   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 36.....                 | 25.3                             | .1   | 13.5  | 13.6  |                                  |  |   |   | 33.1                             | 6.7  | 8.5   | 15.2  | 2,201                           | 1,274  | 409  | 1,683   | 19.4                             | 8.6  | 3.2   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 37.....                 | 30.2                             | *4.8   | 18.4  | 13.6  |                                  |  |   |   | 38.1                             | 1.7  | 13.5  | 15.2  | 3,581                           | 894  | 789  | 1,683   | 21.8                             | 6.2  | 5.6   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 38.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   | 3,965                           | 510  | 1,173  | 1,683   | 20.9                             | 7.1  | 4.7   | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 39.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   | 3,399                           | 1,076  | 607  | 1,683   | 15.8                             | 12.2   | +1.4  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 40.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   | 3,283                           | 1,192  | 491  | 1,683   | 16.4                             | 11.6   | .2  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 41.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   | 2,653                           | 1,822  | +139   | 1,683   | 13.2                             | 14.8   | +3.0  | 11.8  |                                  |  |   |   |                                  |   |  |   |
| 42.....                 |                                  |  |   |   | 12.9                             | 2.2  | 2.9   | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 43.....                 | 18.0                             | 7.4  | 6.2   | 13.6  |                                  |  |   |   | 26.1                             | 13.7   | 1.5   | 15.2  |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 44.....                 | 11.9                             | 13.5   | .1  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 45.....                 |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 46.....                 |                                  |  |   |   | 16.7                             | *1.6   | 6.7   | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 47.....                 |                                  |  |   |   | 10.2                             | 4.9  | .2  | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 48.....                 |                                  |  |   |   | 27.5                             | *12.4  | 17.5  | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 49.....                 | 10.7                             | 14.7   | +1.1  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 50.....                 | 10.5                             | 14.9   | +1.3  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 51.....                 | 11.2                             | 14.2   | +1.6  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 52.....                 | 9.8                              | 15.6   | +2.0  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 53.....                 | 10.6                             | 14.8   | +1.2  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 54.....                 | 10.4                             | 15.0   | +1.4  | 13.6  |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 55.....                 |                                  |  |   |   | 11.9                             | 3.2  | 1.9   | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 56.....                 |                                  |  |   |   | 11.9                             | 3.2  | 1.9   | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 57.....                 |                                  |  |   |   | 8.8                              | 6.3  | +1.2  | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 58.....                 |                                  |  |   |   | 10.9                             | 4.2  | .9  | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| 59.....                 |                                  |  |   |   | 9.6                              | 5.5  | +1.4  | 5.1   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |
| Average...              | 17.9                             | 7.5  | 6.1   | 13.6  | 15.2                             | *.1  | 5.2   | 5.1   | 33.3                             | 6.5  | 8.7   | 15.2  | 3,140                           | 1,335  | 348  | 1,683   | 17.8                             | 10.2   | 1.6   | 11.8  | 19.5                             | .8   | 8.0   | 8.8   | 7.4                              | 2.3   | 1.1  | 3.4   |
| E.....                  | 12.7                             | 12.7   | .9  | 13.6  | 10.7                             | 4.4  | .7  | 5.1   | 22.7                             | 17.1   | +1.9  | 15.2  | 3,067                           | 1,408  | 275  | 1,683   | 15.9                             | 12.1   | +1.3  | 11.8  |                                  |  |   |   | 5.0                              | 4.7   | +1.3   | 3.4   |
| F.....                  | 12.7                             | 12.7   | .9  | 13.6  | 13.0                             | 2.1  | 3.0   | 5.1   | 29.6                             | 10.2   | 5.0   | 15.2  | 3,212                           | 1,263  | 420  | 1,683   | 23.8                             | 4.2  | 7.6   | 11.8  |                                  |  |   |   | 5.5                              | 4.2   | +1.8   | 3.4   |
| Average...              | 12.7                             | 12.7   | .9  | 13.6  | 11.9                             | 3.2  | 1.9   | 5.1   | 26.2                             | 13.6   | 1.6   | 15.2  | 3,140                           | 1,335  | 348  | 1,683   | 19.9                             | 8.1  | 3.7   | 11.8  |                                  |  |   |   | 5.3                              | 4.4   | +1.0   | 3.4   |
| H or I.....</           |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   |                                 |  |  |   |                                  |  |   |   |                                  |  |   |   |                                  |   |  |   |

## ANALYSIS OF RESULTS AT DICKINSON, N. DAK.

TABLE 39.—Comparisons of average acre yields from 24 rotations, with corresponding yields from alternate fallow and from continuous cropping at Dickinson, N. Dak., main field, for 19 years, 1908 to 1926

[Summary of Table 55 (p. 80). For descriptions of rotations, see pages 32-43. For climatic conditions, 1907 to 1924, see page 19, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No. | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Barley                           |   |  |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 20.7) | Rotation yields more than from continuous cropping (mean 11.8) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 46.9) | Rotation yields more than from continuous cropping (mean 26.4) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 3,634) | Rotation yields more than from continuous cropping (mean 3,359) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 25.0) | Rotation yields more than from continuous cropping (mean 19.1) | Alternate fallow yields more than from continuous cropping |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                              | 11   | 12  | 13   | 14                               | 15  | 16   | 17   |
| 1            | 19.8                             | 0.9   | 8.0  | 8.9  | 34.7                             | 11.9  | 8.3  | 20.2   | 3,334                           | 300  | †25   | 275  |                                  |   |  |  |
| 2            | 19.8                             | .9  | 8.0  | 8.9  | 39.2                             | 7.4   | 12.8   | 20.2   | 3,833                           | *199   | 474   | 275  |                                  |   |  |  |
| 3            | 17.4                             | 3.3   | 5.6  | 8.9  | 32.9                             | 13.7  | 6.5  | 20.2   | 3,083                           | 551  | †276  | 275  |                                  |   |  |  |
| 4            | 14.8                             | 5.9   | 3.0  | 8.9  | 37.9                             | 8.7   | 11.5   | 20.2   | 3,091                           | 543  | †268  | 275  |                                  |   |  |  |
| 5            | 20.8                             | *.1   | 9.0  | 8.9  | 33.8                             | 12.8  | 7.4  | 20.2   |                                 |  |   |  |                                  |   |  |  |
| 6            |                                  |   |  |  | 32.7                             | 13.9  | 6.3  | 20.2   | 3,210                           | 424  | †149  | 275  | 25.5                             | *.5   | 6.4  | 5.9  |
| 7            |                                  |   |  |  | 36.5                             | 10.1  | 10.1   | 20.2   | 3,487                           | 147  | 128   | 275  | 19.1                             | 5.9   | 0  | 5.9  |
| 8            | 15.7                             | 5.0   | 3.9  | 8.9  | 45.2                             | 1.4   | 18.8   | 20.2   |                                 |  |   |  |                                  |   |  |  |
| 9            | 14.4                             | 6.3   | 2.6  | 8.9  | 31.6                             | 15.0  | 5.2  | 20.2   | 3,329                           | 305  | †30   | 275  |                                  |   |  |  |
| 10           | 18.4                             | 2.3   | 6.6  | 8.9  | 37.0                             | 9.6   | 10.6   | 20.2   | 3,717                           | *83  | 358   | 275  |                                  |   |  |  |
| 11           | 16.7                             | 4.0   | 4.9  | 8.9  | 32.3                             | 14.3  | 5.9  | 20.2   | 3,219                           | 415  | †140  | 275  |                                  |   |  |  |
| 12           | 17.2                             | 3.5   | 5.4  | 8.9  | 34.0                             | 12.6  | 7.6  | 20.2   | 3,593                           | 41   | 234   | 275  |                                  |   |  |  |
| 14           | 21.2                             | *.5   | 9.4  | 8.9  | 48.6                             | *2.0  | 22.2   | 20.2   | 4,015                           | *381   | 656   | 275  |                                  |   |  |  |
| 15           | 17.2                             | 3.5   | 5.4  | 8.9  | 38.8                             | 7.8   | 12.4   | 20.2   | 3,741                           | *107   | 382   | 275  |                                  |   |  |  |
| 16           | 17.9                             | 2.8   | 6.1  | 8.9  | 37.7                             | 8.9   | 11.3   | 20.2   | 3,763                           | *129   | 404   | 275  |                                  |   |  |  |
| 17           | 17.3                             | 3.4   | 5.5  | 8.9  | 37.0                             | 9.6   | 10.6   | 20.2   | 3,442                           | 192  | 83  | 275  |                                  |   |  |  |
| 18           | 21.8                             | *1.1  | 10.0   | 8.9  | 41.7                             | 4.9   | 15.3   | 20.2   | 3,856                           | *222   | 497   | 275  |                                  |   |  |  |
| 19           | 20.0                             | .7  | 8.2  | 8.9  | 47.6                             | *1.0  | 21.2   | 20.2   | 3,830                           | *196   | 471   | 275  |                                  |   |  |  |
| 31           | 20.4                             | .3  | 8.6  | 8.9  | 42.7                             | 3.9   | 16.3   | 20.2   | 3,723                           | *89  | 364   | 275  |                                  |   |  |  |
| 32           | 16.8                             | 3.9   | 5.0  | 8.9  | 35.5                             | 11.1  | 9.1  | 20.2   | 3,487                           | 147  | 128   | 275  |                                  |   |  |  |
| 42           | 17.1                             | 3.6   | 5.3  | 8.9  | 32.5                             | 14.1  | 6.1  | 20.2   | 3,504                           | 130  | 145   | 275  |                                  |   |  |  |
| 61           | 16.0                             | 4.7   | 4.2  | 8.9  | 34.0                             | 12.6  | 7.6  | 20.2   |                                 |  |   |  |                                  |   |  |  |
| 62           | 16.8                             | 3.9   | 5.0  | 8.9  | 35.3                             | 11.3  | 8.9  | 20.2   | 4,416                           | *782   | 1,057   | 275  |                                  |   |  |  |
| 63           | 17.7                             | 3.0   | 5.9  | 8.9  | 34.2                             | 12.4  | 7.8  | 20.2   |                                 |  |   |  |                                  |   |  |  |
| Average      | 18.0                             | 2.7   | 6.2  | 8.9  | 37.2                             | 9.4   | 10.8   | 20.2   | 3,584                           | 50   | 225   | 275  | 22.3                             | 2.7   | 3.2  | 5.9  |



## ANALYSIS OF RESULTS AT MANDAN, N. DAK.

TABLE 40.—Comparisons of average acre yields from 58 rotations, with corresponding yields from alternate fallow and from continuous cropping at Mandan, N. Dak. (main field), for 12 years, 1915 to 1926

[Summary of Table 56 (p. 84). For descriptions of rotations, see pages 32-43. Replicated rotations are designated by the suffixed letters, a, b, c, etc., in column 1 indicating the number of times such replications were used. For climatic conditions 1914 to 1924, see page 23, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No. | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 19.9) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 49.9) | Rotation yields more than from continuous cropping (mean 26.4) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 6,140) | Rotation yields more than from continuous cropping (mean 4,425) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 37.2) | Rotation yields more than from continuous cropping (mean 31.7) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 30.4) | Rotation yields more than from continuous cropping (mean 19.4) | Alternate fallow yields more than from continuous cropping |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                              | 11   | 12  | 13   | 14                               | 15  | 16   | 17   | 18                               | 19  | 20   | 21   |
| 1a           | 16.4                             | 3.5   | 4.4  | 7.9  | 28.0                             | 21.9  | 1.6  | 23.5   | 4,131                           | 1,018  | 1294  | 724  | 25.9                             | 11.3  | 15.8   | 5.5  |                                  |   |  |  |
| 1b           | 16.4                             | 3.5   | 4.4  | 7.9  | 30.0                             | 19.9  | 3.6  | 23.5   | 4,140                           | 1,009  | 1285  | 724  | 28.1                             | 9.1   | 13.6   | 5.5  |                                  |   |  |  |
| 1c           | 14.3                             | 5.6   | 2.3  | 7.9  | 28.0                             | 21.9  | 1.6  | 23.5   | 3,763                           | 1,386  | 1062  | 724  | 25.6                             | 11.6  | 16.1   | 3.5  |                                  |   |  |  |
| 2a           | 17.1                             | 2.8   | 5.1  | 7.9  | 35.2                             | 14.7  | 8.8  | 23.5   | 4,256                           | 893  | 1169  | 724  | 30.3                             | 6.9   | 11.4   | 5.5  |                                  |   |  |  |
| 2b           | 17.7                             | 2.2   | 5.7  | 7.9  | 35.5                             | 14.0  | 9.1  | 23.5   | 4,305                           | 844  | 1120  | 724  | 30.7                             | 6.5   | 11.0   | 5.5  |                                  |   |  |  |
| 2c           | 15.8                             | 4.1   | 3.8  | 7.9  | 32.9                             | 17.0  | 6.5  | 23.5   | 4,063                           | 1,086  | 1362  | 724  | 29.6                             | 7.6   | 12.1   | 5.5  |                                  |   |  |  |
| 3a           | 15.2                             | 4.7   | 3.2  | 7.9  | 29.1                             | 20.8  | 2.7  | 23.5   | 3,741                           | 1,408  | 1684  | 724  | 25.3                             | 11.9  | 16.4   | 5.5  |                                  |   |  |  |
| 3b           | 14.6                             | 5.3   | 2.6  | 7.9  | 30.5                             | 19.4  | 4.1  | 23.5   | 3,970                           | 1,179  | 1455  | 724  | 27.6                             | 9.6   | 14.1   | 5.5  |                                  |   |  |  |
| 3c           | 13.4                             | 6.5   | 1.4  | 7.9  | 27.7                             | 22.2  | 1.3  | 23.5   | 3,586                           | 1,563  | 1839  | 724  | 25.1                             | 12.1  | 16.6   | 5.5  |                                  |   |  |  |
| 4a           | 13.5                             | 6.4   | 1.5  | 7.9  | 36.2                             | 13.7  | 9.8  | 23.5   | 4,068                           | 1,681  | 1357  | 724  | 27.1                             | 10.1  | 14.6   | 5.5  |                                  |   |  |  |
| 4b           | 11.7                             | 8.2   | 1.3  | 7.9  | 35.8                             | 14.1  | 9.4  | 23.5   | 3,883                           | 1,266  | 1542  | 724  | 25.3                             | 11.9  | 16.4   | 5.5  |                                  |   |  |  |
| 4c           | 13.3                             | 6.6   | 1.3  | 7.9  | 34.8                             | 15.1  | 8.4  | 23.5   | 3,703                           | 1,446  | 1722  | 724  | 25.8                             | 11.4  | 15.9   | 3.5  |                                  |   |  |  |
| 5a           | 21.1                             | *1.2  | 9.1  | 7.9  | 32.9                             | 17.0  | 6.5  | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 5b           | 18.2                             | 1.7   | 6.2  | 7.9  | 28.4                             | 21.5  | 2.0  | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 5c           | 19.5                             | .4  | 7.5  | 7.9  | 28.8                             | 21.1  | 2.4  | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 6a           |                                  |   |  |  | 32.0                             | 17.9  | 5.6  | 23.5   | 4,277                           | 872  | 1148  | 724  | 29.5                             | 7.7   | 12.2   | 5.5  | 23.2                             | 7.2   | 3.8  | 11.0   |
| 6b           |                                  |   |  |  | 30.4                             | 19.5  | 4.0  | 23.5   | 3,995                           | 1,154  | 1430  | 724  | 27.0                             | 10.2  | 14.7   | 5.5  | 23.7                             | 6.7   | 4.3  | 11.0   |
| 6c           |                                  |   |  |  | 26.6                             | 23.3  | .2   | 23.5   | 3,560                           | 1,589  | 1865  | 724  | 24.1                             | 13.1  | 17.6   | 5.5  | 21.4                             | 9.0   | 2.0  | 11.0   |
| 7a           |                                  |   |  |  | 38.4                             | 11.5  | 12.0   | 23.5   | 4,678                           | 471  | 253   | 724  | 31.3                             | 5.9   | 1.4  | 5.5  | 22.5                             | 7.9   | 3.1  | 11.0   |
| 7b           |                                  |   |  |  | 36.5                             | 13.4  | 10.1   | 23.5   | 4,182                           | 967  | 1243  | 724  | 30.4                             | 6.8   | 11.3   | 5.5  | 20.3                             | 10.1  | .9   | 11.0   |
| 7c           |                                  |   |  |  | 24.9                             | 15.0  | 8.5  | 23.5   | 4,088                           | 1,061  | 1337  | 724  | 29.4                             | 7.8   | 12.3   | 5.5  | 23.5                             | 9.9   | 1.1  | 11.0   |
| 8a           | 17.6                             | 2.3   | 5.6  | 7.9  | 53.6                             | *3.7  | 27.2   | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 8b           | 12.7                             | 7.2   | .7   | 7.9  | 48.3                             | 1.6   | 21.9   | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 8c           | 13.5                             | 6.4   | 1.5  | 7.9  | 47.9                             | 2.0   | 21.5   | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 9a           | 16.5                             | 3.4   | 4.5  | 7.9  | 36.4                             | 13.5  | 10.0   | 23.5   | 4,247                           | 902  | 1178  | 724  | 29.4                             | 7.8   | 12.3   | 5.5  |                                  |   |  |  |
| 9b           | 15.2                             | 4.7   | 3.2  | 7.9  | 35.2                             | 14.7  | 8.8  | 23.5   | 3,943                           | 1,206  | 1482  | 724  | 27.4                             | 9.8   | 14.3   | 5.5  |                                  |   |  |  |
| 9c           | 15.1                             | 4.8   | 3.1  | 7.9  | 37.7                             | 12.2  | 11.3   | 23.5   | 4,134                           | 1,015  | 1291  | 724  | 30.2                             | 7.0   | 11.5   | 5.5  |                                  |   |  |  |
| 13           | 15.1                             | 4.8   | 3.1  | 7.9  | 31.5                             | 18.4  | 5.1  | 23.5   | 4,212                           | 937  | 1213  | 724  | 29.2                             | 8.0   | 12.5   | 5.5  |                                  |   |  |  |
| 14           | 14.6                             | 5.3   | 2.6  | 7.9  | 35.5                             | 14.4  | 9.1  | 23.5   | 4,180                           | 969  | 1245  | 724  | 29.4                             | 7.8   | 12.3   | 5.5  |                                  |   |  |  |
| 15           | 17.6                             | 2.3   | 5.6  | 7.9  | 33.2                             | 16.7  | 6.8  | 23.5   | 4,069                           | 1,080  | 1356  | 724  | 28.7                             | 8.5   | 13.0   | 5.5  |                                  |   |  |  |
| 16           | 14.5                             | 5.4   | 2.5  | 7.9  | 32.4                             | 17.5  | 6.0  | 23.5   | 4,148                           | 1,001  | 1277  | 724  | 28.3                             | 8.9   | 13.4   | 5.5  |                                  |   |  |  |
| 17           | 16.0                             | 3.9   | 4.0  | 7.9  | 35.5                             | 14.4  | 9.1  | 23.5   | 4,377                           | 772  | 148   | 724  | 29.9                             | 7.3   | 11.8   | 5.5  |                                  |   |  |  |
| 18           | 18.7                             | 1.2   | 6.7  | 7.9  | 32.3                             | 17.6  | 5.9  | 23.5   | 4,329                           | 820  | 196   | 724  | 30.6                             | 6.6   | 11.1   | 5.5  |                                  |   |  |  |
| 19           | 15.5                             | 4.4   | 3.5  | 7.9  | 49.9                             | 0.0   | 23.5   | 23.5   | 4,345                           | 804  | 180   | 724  | 30.8                             | 6.4   | 1.9  | 5.5  |                                  |   |  |  |
| 31           | 13.9                             | 6.0   | 1.9  | 7.9  | 33.3                             | 16.6  | 6.9  | 23.5   | 4,222                           | 927  | 1203  | 724  | 29.6                             | 7.6   | 12.1   | 5.5  |                                  |   |  |  |
| 32           | 15.3                             | 4.6   | 3.3  | 7.9  | 30.2                             | 19.7  | 3.8  | 23.5   | 4,277                           | 872  | 1148  | 724  | 28.9                             | 8.3   | 12.8   | 5.5  |                                  |   |  |  |
| 40           |                                  |   |  |  | 31.0                             | 18.9  | 4.6  | 23.5   | 3,877                           | 1,272  | 1548  | 724  | 25.9                             | 11.3  | 15.8   | 5.5  |                                  |   |  |  |
| 41           | 15.1                             | 4.8   | 3.1  | 7.9  | 24.3                             | 25.6  | 12.1   | 23.5   | 3,914                           | 1,235  | 1511  | 724  | 27.8                             | 9.4   | 13.9   | 5.5  |                                  |   |  |  |
| 42           | 17.7                             | 2.2   | 5.7  | 7.9  | 29.2                             | 20.7  | 2.8  | 23.5   | 4,392                           | 757  | 133   | 724  | 29.8                             | 7.4   | 11.9   | 5.5  |                                  |   |  |  |
| 49           | 14.3                             | 5.6   | 2.3  | 7.9  |                                  |   |  |  | 3,603                           | 1,546  | 1822  | 724  | 25.7                             | 11.5  | 16.0   | 5.5  |                                  |   |  |  |
| 58           | 12.2                             | 7.7   | .2   | 7.9  | 32.4                             | 17.5  | 6.0  | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 68           | 17.7                             | 2.2   | 5.7  | 7.9  | 32.8                             | 17.1  | 6.4  | 23.5   | 5,012                           | 137  | 587   | 724  | 30.8                             | 6.4   | 1.9  | 5.5  |                                  |   |  |  |
| 69           | 18.1                             | 1.8   | 6.1  | 7.9  | 30.0                             | 19.9  | 3.6  | 23.5   | 4,432                           | 717  | 7   | 724  | 29.1                             | 8.1   | 12.6   | 5.5  |                                  |   |  |  |
| 70           | 15.6                             | 4.3   | 3.6  | 7.9  | 31.5                             | 18.4  | 5.1  | 23.5   | 4,285                           | 864  | 1140  | 724  | 28.2                             | 9.0   | 13.5   | 5.5  |                                  |   |  |  |
| 71           | 15.8                             | 4.1   | 3.8  | 7.9  | 48.7                             | 1.2   | 22.3   | 23.5   | 4,356                           | 793  | 169   | 724  | 30.5                             | 6.7   | 11.2   | 5.5  |                                  |   |  |  |
| 72           | 21.6                             | *1.7  | 9.6  | 7.9  | 32.7                             | 17.2  | 6.3  | 23.5   | 4,278                           | 871  | 1147  | 724  | 29.6                             | 7.6   | 12.1   | 5.5  |                                  |   |  |  |
| 75           | 24.0                             | *4.1  | 12.0   | 7.9  | 46.1                             | 3.8   | 19.7   | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 76           | 19.6                             | .3  | 7.6  | 7.9  | 53.4                             | *3.5  | 27.0   | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 80           | 14.2                             | 5.7   | 2.2  | 7.9  |                                  |   |  |  | 4,202                           | 947  | 1223  | 724  | 29.0                             | 8.2   | 12.7   | 5.5  | 13.9                             | 16.5  | 15.5   | 11.0   |
| 243          |                                  |   |  |  |                                  |   |  |  | 3,789                           | 1,360  | 1636  | 724  | 26.2                             | 11.0  | 15.5   | 5.5  |                                  |   |  |  |
| 244a         |                                  |   |  |  |                                  |   |  |  | 4,208                           | 941  | 1217  | 724  | 28.9                             | 8.3   | 12.8   | 5.5  |                                  |   |  |  |
| 244b         |                                  |   |  |  |                                  |   |  |  | 3,495                           | 1,654  | 1930  | 724  | 24.4                             | 12.8  | 17.3   | 5.5  |                                  |   |  |  |
| 245          |                                  |   |  |  |                                  |   |  |  | 4,140                           | 1,009  | 1285  | 724  | 32.1                             | 5.1   | .4   | 5.5  |                                  |   |  |  |
| 246          |                                  |   |  |  |                                  |   |  |  | 4,715                           | 434  | 290   | 724  | 31.1                             | 6.1   | 1.6  | 5.5  |                                  |   |  |  |
| 247          |                                  |   |  |  |                                  |   |  |  | 5,054                           | 95   | 629   | 724  | 29.6                             | 7.6   | 12.1   | 5.5  |                                  |   |  |  |
| 248          | 13.1                             | 6.8   | 1.1  | 7.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 249          |                                  |   |  |  | 29.3                             | 20.6  | 2.9  | 23.5   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 570          | 22.5                             | *2.6  | 10.5   | 7.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| Average      | 16.2                             | 3.7   | 4.2  | 7.9  | 34.7                             | 15.2  | 8.3  | 23.5   | 4,144                           | 1,005  | 1281  | 724  | 28.5                             | 8.7   | 13.2   | 5.5  | 20.8                             | 9.6   | 1.4  | 11.0   |

## ANALYSIS OF RESULTS AT EDGELEY, N. DAK.

TABLE 41.—Comparisons of average acre yields from 27 rotations, with corresponding yields from alternate fallow and from continuous cropping at Edgeley, N. Dak. (main field), for 16 years, 1907 to 1922

[Summary of Table 57 (p. 89). For descriptions of rotations, see pages 32-43. Replicated rotations are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1903 to 1922, see page 24, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping, a double dagger (‡) indicates yields from continuous cropping which are more than those from alternate fallow]

| Rotation No. | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |  |  |  | Barley                           |   |  |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|--|--|--|----------------------------------|---|--|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 13.1) | Rotation yields more than from continuous cropping (mean 11.4) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 35.3) | Rotation yields more than from continuous cropping (mean 25.8) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 3,365) | Rotation yields more than from continuous cropping (mean 3,401) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 4.7) | Rotation yields more than from continuous cropping (mean 45.0) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 19.8) | Rotation yields more than from continuous cropping (mean 17.9) | Alternate fallow yields more than from continuous cropping |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                              | 11   | 12  | 13   | 14                               | 15   | 16   | 17   | 18                               | 19  | 20   | 21   |
| 1a.....      | 19.2                             | *6.1  | 7.8  | 1.7  | 32.0                             | 7.3   | 6.2  | 13.5   | 4,227                           | *862   | 766   | 196  | 5.9                              | *1.2   | 0.9  | †0.3   |                                  |   |  |  |
| 1b.....      | 14.7                             | *1.6  | 2.8  | 1.7  | 28.5                             | 12.8  | 4.7  | 13.5   | 3,308                           | *3   | †93   | †96  | 5.4                              | *1.7   | .4   | †††  |                                  |   |  |  |
| 2a.....      | 17.0                             | *3.9  | 2.6  | 1.7  | 30.5                             | 8.8   | 4.7  | 13.5   | 4,420                           | *1,055   | 959   | †96  | 6.7                              | *2.0   | 1.7  | †††  |                                  |   |  |  |
| 2b.....      | 14.7                             | *1.6  | 2.8  | 1.7  | 31.3                             | 8.0   | 5.5  | 13.5   | 3,691                           | *326   | 230   | †96  | 5.6                              | *.9  | .6   | †††  |                                  |   |  |  |
| 3.....       | 17.0                             | *3.9  | 2.6  | 1.7  | 31.2                             | 8.1   | 5.4  | 13.5   | 3,797                           | *432   | 336   | †96  | 5.6                              | *.9  | .6   | †††  |                                  |   |  |  |
| 4.....       | 14.0                             | *.9   | 2.6  | 1.7  | 33.1                             | 6.2   | 7.3  | 13.5   | 3,677                           | *312   | 216   | †96  | 5.5                              | *.8  | .5   | †††  |                                  |   |  |  |
| 5.....       | 16.9                             | *3.8  | 5.5  | 1.7  | 35.6                             | 3.7   | 9.8  | 13.5   |                                 |  |   |  |                                  |  |  |  |                                  |   |  |  |
| 6.....       |                                  |   |  |  | 30.2                             | 9.1   | 4.4  | 13.5   | 3,710                           | *345   | 249   | †96  | 5.4                              | *.7  | .4   | †††  | 24.2                             | *4.4  | 7.2  | 2.8  |
| 7.....       |                                  |   |  |  | 34.8                             | 4.5   | 9.0  | 13.5   | 4,067                           | *702   | 606   | †96  | 5.3                              | *.6  | .3   | †††  | 20.8                             | *1.0  | 3.8  | 2.8  |
| 8.....       | 14.2                             | *1.1  | 2.8  | 1.7  | 36.1                             | 3.2   | 10.3   | 13.5   |                                 |  |   |  |                                  |  |  |  |                                  |   |  |  |
| 9.....       | 14.5                             | *1.4  | 3.1  | 1.7  | 30.9                             | 8.4   | 5.1  | 13.5   | 3,846                           | *481   | 385   | †96  | 5.4                              | *.7  | .4   | †††  |                                  |   |  |  |
| 10.....      | 17.3                             | *4.2  | 5.9  | 1.7  | 28.2                             | 11.1  | 2.4  | 13.5   | 3,996                           | *631   | 535   | †96  | 6.2                              | *1.5   | 1.2  | †††  |                                  |   |  |  |
| 11.....      | 15.2                             | *2.1  | 3.8  | 1.7  | 29.8                             | 9.5   | 4.0  | 13.5   | 3,654                           | *289   | 193   | †96  | 5.8                              | *1.1   | .8   | †††  |                                  |   |  |  |
| 12.....      | 17.3                             | *4.2  | 5.9  | 1.7  | 33.0                             | 6.3   | 7.2  | 13.5   | 4,466                           | *1,101   | 1,005   | †96  | 6.6                              | *1.9   | 1.6  | †††  |                                  |   |  |  |
| 14.....      | 18.7                             | *5.6  | 7.3  | 1.7  | 37.1                             | 2.2   | 11.3   | 13.5   | 4,046                           | *681   | 585   | †96  | 6.0                              | *1.3   | 1.0  | †††  |                                  |   |  |  |
| 15.....      | 15.3                             | *2.2  | 3.9  | 1.7  | 32.1                             | 7.2   | 6.3  | 13.5   | 3,437                           | *72  | †24   | †96  | 5.7                              | *1.0   | .7   | †††  |                                  |   |  |  |
| 16.....      | 16.0                             | *2.9  | 4.6  | 1.7  | 35.0                             | 4.3   | 9.2  | 13.5   | 3,269                           | 96   | †192  | †96  | 4.3                              | *.4  | †.7  | †††  |                                  |   |  |  |
| 17.....      | 16.0                             | *2.9  | 4.6  | 1.7  | 33.2                             | 6.1   | 7.4  | 13.5   | 2,947                           | 418  | †514  | †96  | 4.4                              | *.3  | †.6  | †††  |                                  |   |  |  |
| 18.....      | 15.9                             | *2.8  | 4.5  | 1.7  | 32.4                             | 6.9   | 6.6  | 13.5   | 3,204                           | †101   | †197  | †96  | 4.9                              | *.2  | †.1  | †††  |                                  |   |  |  |
| 19.....      | 16.4                             | *3.3  | 5.0  | 1.7  | 37.8                             | 1.5   | 12.0   | 13.5   | 3,483                           | *118   | 22  | †96  | 5.5                              | *.8  | .5   | †††  |                                  |   |  |  |
| 31.....      | 17.1                             | *4.0  | 5.7  | 1.7  | 33.5                             | 5.8   | 7.7  | 13.5   | 3,893                           | *528   | 432   | †96  | 6.2                              | *1.5   | 1.2  | †††  |                                  |   |  |  |
| 32.....      | 14.8                             | *1.7  | 3.4  | 1.7  | 30.6                             | 8.7   | 4.8  | 13.5   | 3,831                           | *466   | 370   | †96  | 6.6                              | *1.9   | 1.6  | †††  |                                  |   |  |  |
| 42.....      | 14.5                             | *1.4  | 3.1  | 1.7  | 25.7                             | 13.6  | †.1  | 13.5   | 3,583                           | *218   | 122   | †96  | 5.5                              | *.8  | .5   | †††  |                                  |   |  |  |
| 71a.....     | 18.8                             | *5.7  | 7.4  | 1.7  | 37.9                             | 1.4   | 12.1   | 13.5   | 4,442                           | *1,077   | 981   | †96  | 6.7                              | *2.0   | 1.7  | †††  |                                  |   |  |  |
| 71b.....     | 18.7                             | *5.6  | 7.3  | 1.7  | 41.0                             | *1.7  | 15.2   | 13.5   | 4,245                           | *880   | 784   | †96  | 7.7                              | *3.0   | 2.7  | †††  |                                  |   |  |  |
| 72a.....     | 18.1                             | *5.0  | 6.7  | 1.7  | 34.2                             | 5.1   | 8.4  | 13.5   | 4,085                           | *720   | 624   | †96  | 5.9                              | *1.2   | .9   | †††  |                                  |   |  |  |
| 72b.....     | 18.8                             | *5.7  | 7.4  | 1.7  | 46.1                             | *6.8  | 20.3   | 13.5   | 4,252                           | *887   | 791   | †96  | 8.1                              | *3.4   | 3.1  | †††  |                                  |   |  |  |
| Average..... | 16.4                             | *3.3  | 5.0  | 1.7  | 33.3                             | 6.0   | 7.5  | 13.5   | 3,828                           | *463   | 367   | †96  | 5.9                              | *1.2   | .9   | †.3  | 22.5                             | *2.7  | 5.5  | 2.8  |



TABLE 42.—Comparisons of average acre yields from 65 rotations, with corresponding yields from alternate fallow and from continuous cropping at Sheridan, Wyo., for 9 years, 1918 to 1926

[Summary of Table 58 (p. 92). For descriptions of rotations, see pages 32-43. Replicated rotations are designated by the suffixed letters a, h, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1917 to 1924, see page 26, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow; a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No. | Winter wheat                     |   |  |  | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  | Flax                             |  |   |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|--|---|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (hushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (hushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (hushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |   |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 23.4) | Rotation yields more than from continuous cropping (mean 14.8) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 23.1) | Rotation yields more than from continuous cropping (mean 13.2) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 46.6) | Rotation yields more than from continuous cropping (mean 32.8) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 3,307) | Rotation yields more than from continuous cropping (mean 2,966) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 23.3) | Rotation yields more than from continuous cropping (mean 20.4) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 39.2) | Rotation yields more than from continuous cropping (mean 25.2) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 4.7) | Rotation yields more than from continuous cropping (mean 4.1) | Alternate fallow yields more than from continuous cropping |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                               | 11  | 12   | 13   | 14                              | 15   | 16  | 17   | 18                               | 19  | 20   | 21   | 22                               | 23  | 24   | 25   | 26                               | 27   | 28  | 29   |
| 1            |                                  |   |  |  | 17.8                             | 5.3   | 4.6  | 9.9  | 35.5                             | 11.1  | 2.7  | 13.8   | 2,793                           | 514  | †173  | 341  | 17.4                             | 5.9   | †3.0   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 2a           |                                  |   |  |  | 17.7                             | 5.4   | 4.5  | 9.9  | 37.0                             | 9.0   | 4.5  | 13.8   | 2,818                           | 389  | †48   | 341  | 18.5                             | 5.0   | †2.1   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 2b           |                                  |   |  |  | 16.9                             | 6.2   | 3.7  | 9.9  | 31.1                             | 15.5  | †1.7   | 13.8   | 3,072                           | 235  | †106  | 341  | 22.6                             | 7.7   | †2.2   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 3            |                                  |   |  |  | 18.0                             | 5.1   | 4.5  | 9.9  | 35.8                             | 10.8  | 3.0  | 13.8   | 2,954                           | 353  | †12   | 341  | 18.4                             | 4.9   | †2.0   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 4            |                                  |   |  |  | 16.1                             | 7.0   | 11.2   | 9.9  | 37.5                             | 9.1   | 4.7  | 13.8   | 2,640                           | 667  | †326  | 341  | 16.0                             | 7.3   | †4.4   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 5a           |                                  |   |  |  | 24.4                             | *1.3  |  |  | 41.2                             | 5.4   | 8.4  | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 5b           |                                  |   |  |  | 22.8                             | .3  | 9.6  | 9.9  | 40.3                             | 6.3   | 7.5  | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 6            |                                  |   |  |  |                                  |   |  |  | 37.6                             | 9.0   | 4.5  | 13.8   | 3,050                           | 257  | 84  | 341  | 19.5                             | 3.8   |  | 2.9  | 36.0                             |   |  |  |                                  |  |   |  |
| 7a           |                                  |   |  |  |                                  |   |  |  | 38.3                             | 8.3   | 5.5  | 13.8   | 2,956                           | 351  | †10   | 341  | 17.8                             | 5.5   | †2.6   | 2.9  | 32.0                             | 3.2   | 10.8   | 14.0   |                                  |  |   |  |
| 7b           |                                  |   |  |  |                                  |   |  |  | 44.8                             | 1.8   | 12.0   | 13.8   | 3,010                           | 297  | 44  | 341  | 21.5                             | 1.8   | 1.1  | 2.9  | 38.5                             | 7.7   | 13.3   | 14.0   |                                  |  |   |  |
| 8            |                                  |   |  |  | 16.3                             | 6.8   | 3.1  | 9.9  | 46.7                             | *.1   | 13.9   | 13.8   | 2,809                           | 498  | †157  | 341  | 17.2                             | 6.1   | †3.2   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 9a           |                                  |   |  |  | 15.2                             | 7.9   | 2.0  | 9.9  | 37.7                             | 8.9   | 4.9  | 13.8   | 3,153                           | 154  | †187  | 341  | 21.9                             | 1.4   | 1.5  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 9b           |                                  |   |  |  | 16.7                             | 6.4   | 3.5  | 9.9  | 39.3                             | 7.3   | 6.5  | 13.8   | 2,851                           | 456  | †115  | 341  | 17.0                             | 6.3   | †3.4   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 13           |                                  |   |  |  | 17.8                             | 5.3   | 4.6  | 9.9  | 33.9                             | 12.7  | 1.1  | 13.8   | 3,307                           | 0  | 341   | 341  | 22.1                             | 1.2   | 1.7  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 14           |                                  |   |  |  | 19.5                             | 3.6   | 6.3  | 9.9  | 46.2                             | .4  | 13.4   | 13.8   | 3,304                           | 3  | 338   | 341  | 22.2                             | 1.1   | 1.8  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 15           |                                  |   |  |  | 22.9                             | 2.2   | 9.7  | 9.9  | 42.7                             | 3.9   | 9.9  | 13.8   | 3,132                           | 175  | 166   | 341  | 21.5                             | 1.8   | 1.1  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 16           |                                  |   |  |  | 19.6                             | 3.5   | 6.4  | 9.9  | 43.9                             | 2.7   | 11.1   | 13.8   | 3,403                           | *96  | 437   | 341  | 22.5                             | 3.8   | 2.1  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 17           |                                  |   |  |  | 24.3                             | *1.2  | 11.1   | 9.9  | 43.1                             | 3.5   | 10.3   | 13.8   | 3,033                           | 274  | 67  | 341  | 20.2                             | 3.1   | 1.2  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 18           |                                  |   |  |  | 23.8                             | *.7   | 10.6   | 9.9  | 42.8                             | 3.8   | 10.0   | 13.8   | 3,033                           | 274  | 67  | 341  | 20.2                             | 3.1   | 1.2  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 19           |                                  |   |  |  | 20.3                             | 2.8   | 7.1  | 9.9  | 46.8                             | *.2   | 14.0   | 13.8   | 3,106                           | 201  | 140   | 341  | 19.9                             | 3.4   | 1.5  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 37           |                                  | 24.9  | 4.5  | 10.1   | 14.6                             |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 41           |                                  |   |  |  | 16.4                             | 6.7   | 3.2  | 9.9  | 35.1                             | 11.5  | 2.3  | 13.8   | 2,568                           | 739  | †398  | 341  | 17.7                             | 5.6   | †2.7   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 42           |                                  |   |  |  | 17.5                             | 5.6   | 4.5  | 9.9  | 33.6                             | 13.0  | .9   | 13.8   | 2,933                           | 374  | †33   | 341  | 19.1                             | 4.2   | 1.3  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 44           |                                  |   |  |  | 20.3                             | 2.8   | 7.1  | 9.9  |                                  |   |  |  | 3,447                           | *140   | 481   | 341  | 20.3                             | 3.0   | 1.1  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 47           |                                  |   |  |  |                                  |   |  |  | 49.9                             | *3.3  | 17.1   | 13.8   | 2,915                           | 392  | †51   | 341  | 20.2                             | 3.1   | 1.2  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 48           |                                  |   |  |  | 13.9                             | 9.2   | .7   | 9.9  | 31.6                             | 15.0  | †1.2   | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 58           |                                  |   |  |  | 16.2                             | 6.9   | 3.0  | 9.9  | 43.0                             | 3.6   | 10.2   | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 67           |                                  |   |  |  | 16.4                             | 6.7   | 3.2  | 9.9  | 43.0                             | 3.6   | 10.2   | 13.8   | 3,123                           | 184  | 157   | 341  | 18.1                             | 5.2   | †2.3   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 68           |                                  |   |  |  | 18.5                             | 4.6   | 5.3  | 9.9  | 33.2                             | 13.4  | 2.3  | 13.8   | 3,096                           | 211  | 130   | 341  | 19.2                             | 5.9   | †3.0   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 69           |                                  |   |  |  | 19.2                             | 3.9   | 6.0  | 9.9  | 35.1                             | 11.5  | 2.3  | 13.8   | 3,203                           | 104  | 237   | 341  | 19.5                             | 4.1   | †1.2   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 70           |                                  |   |  |  | 19.4                             | 3.7   | 6.2  | 9.9  | 39.3                             | 7.3   | 6.5  | 13.8   | 3,316                           | *9   | 350   | 341  | 19.5                             | 3.8   | 1.9  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 71           |                                  |   |  |  | 19.5                             | 3.6   | 6.3  | 9.9  | 51.0                             | *4.4  | 18.2   | 13.8   | 3,892                           | 415  | †74   | 341  | 18.0                             | 5.3   | †2.4   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 72           |                                  |   |  |  | 20.9                             | 2.2   | 7.7  | 9.9  | 38.4                             | 8.2   | 5.6  | 13.8   | 2,697                           | 615  | †269  | 341  | 16.6                             | 6.7   | †3.8   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 85a          | 32.2                             | *2.8  | 17.4   | 14.6   |                                  |   |  |  |                                  |   |  |  | 2,629                           | 678  | †337  | 341  | 15.9                             | 7.4   | †4.5   | 2.9  | 33.7                             | 5.5   | 8.5  | 14.0   | 6.5                              | *1.8   | 2.4   | 0.6  |
| 85b          | 32.9                             | *3.5  | 18.1   | 14.6   |                                  |   |  |  |                                  |   |  |  | 2,805                           | 508  | †161  | 341  | 16.3                             | 7.0   | †4.1   | 2.9  | 30.5                             | 8.7   | 5.3  | 14.0   | 6.6                              | *1.9   | 2.5   | 0.6  |
| 114          |                                  |   |  |  |                                  |   |  |  | 43.2                             | 3.4   | 10.4   | 13.8   | 3,173                           | 134  | 207   | 341  | 21.7                             | 1.6   | 1.3  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 115          |                                  |   |  |  |                                  |   |  |  | 40.3                             | 6.3   | 7.5  | 13.8   | 2,911                           | 396  | 155   | 341  | 20.1                             | 3.2   | 1.3  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 116          |                                  |   |  |  |                                  |   |  |  | 42.0                             | 4.6   | 9.2  | 13.8   | 3,092                           | 215  | 126   | 341  | 21.3                             | 2.0   | .9   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 118          |                                  |   |  |  |                                  |   |  |  | 41.1                             | 5.5   | 8.3  | 13.8   | 3,159                           | 148  | 193   | 341  | 20.6                             | 2.7   | .2   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 119          |                                  |   |  |  |                                  |   |  |  | 42.7                             | 3.9   | 9.9  | 13.8   | 3,087                           | 220  | 121   | 341  | 19.5                             | 3.8   | †.9  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 131          |                                  |   |  |  |                                  |   |  |  | 43.7                             | 2.9   | 10.9   | 13.8   | 3,023                           | 284  | 57  | 341  | 19.9                             | 3.4   | †.5  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 132a         |                                  |   |  |  |                                  |   |  |  | 42.7                             | 3.9   | 9.9  | 13.8   | 2,996                           | 311  | 30  | 341  | 19.9                             | 4.0   | †1.1   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 132b         |                                  |   |  |  |                                  |   |  |  | 44.3                             | 2.3   | 11.5   | 13.8   | 3,150                           | 157  | 184   | 341  | 19.8                             | 3.5   | †.6  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 135          |                                  |   |  |  |                                  |   |  |  | 34.3                             | 12.3  | 1.5  | 13.8   | 2,798                           | 509  | †168  | 341  | 20.3                             | 3.0   | †.1  | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 243          |                                  |   |  |  |                                  |   |  |  | 41.7                             | 4.9   | 8.9  | 13.8   | 2,783                           | 524  | †183  | 341  | 17.6                             | 6.3   | †3.4   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 244          |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  | 3,134                           | 173  | 168   | 341  | 20.0                             | 2.7   | .2   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 245          |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  | 3,146                           | 161  | 180   | 341  | 21.3                             | 2.0   | .9   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 246          |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  | 3,146                           | 161  | 180   | 341  | 21.3                             | 2.0   | .9   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 247          |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  | 3,146                           | 161  | 180   | 341  | 19.0                             | 4.3   | †1.4   | 2.9  |                                  |   |  |  |                                  |  |   |  |
| 248          |                                  |   |  |  | 17.4                             | 5.7   | 4.2  | 9.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 258          |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 570          |                                  |   |  |  |                                  |   |  |  | 37.9                             | 8.7   | 5.1  | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 571          |                                  |   |  |  |                                  |   |  |  | 33.7                             | 12.9  | .9   | 13.8   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 572          |                                  |   |  |  | 23.9                             | 5.5   | 9.1  | 14.6   |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  | 25.2                             | *2.1  | 12.0   | 9.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |

## ANALYSIS OF RESULTS AT BELLE FOURCHE, S. DAK.

TABLE 43.—Comparisons of average acre yields from 33 rotations, with corresponding yields from alternate fallow and from continuous cropping at Belle Fourche, S. Dak., for 18 years, 1909 to 1926

[Summary of Table 59 (p. 96). For descriptions of rotations, see pages 32-43. For climatic conditions 1908 to 1924, see page 30, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No. | Winter wheat  |  |  |     | Spring wheat  |  |  |     | Oats  |  |  |      | Corn total   |   |  |     | Corn grain  |  |  |     | Barley  |  |  |      |
|--------------|---|--|--|-----|---|--|--|-----|---|--|--|------|--|---|--|-----|---|--|--|-----|---|--|--|------|
|              | Difference in acre yields (bushels)                         |  |  |     | Difference in acre yields (bushels)                         |  |  |     | Difference in acre yields (bushels)                         |  |  |      | Difference in acre yields (pounds)                           |   |  |     | Difference in acre yields (bushels)                         |  |  |     | Difference in acre yields (bushels)                         |  |  |      |
|              | Acre yield of rotation (bushels)                            |  |  |     | Acre yield of rotation (bushels)                            |  |  |     | Acre yield of rotation (bushels)                            |  |  |      | Acre yield of rotation (pounds)                              |   |  |     | Acre yield of rotation (bushels)                            |  |  |     | Acre yield of rotation (bushels)                            |  |  |      |
|              | Rotation yields less than from alternate fallow (mean 22.5) | Rotation yields more than from continuous cropping (mean 14.9) | Alternate fallow yields more than from continuous cropping |     | Rotation yields less than from alternate fallow (mean 22.7) | Rotation yields more than from continuous cropping (mean 14.7) | Alternate fallow yields more than from continuous cropping |     | Rotation yields less than from alternate fallow (mean 49.5) | Rotation yields more than from continuous cropping (mean 32.9) | Alternate fallow yields more than from continuous cropping |      | Rotation yields less than from alternate fallow (mean 4,260) | Rotation yields more than from continuous cropping (mean 3,514) | Alternate fallow yields more than from continuous cropping |     | Rotation yields less than from alternate fallow (mean 20.4) | Rotation yields more than from continuous cropping (mean 21.4) | Alternate fallow yields more than from continuous cropping |     | Rotation yields less than from alternate fallow (mean 36.2) | Rotation yields more than from continuous cropping (mean 23.1) | Alternate fallow yields more than from continuous cropping |      |
| 1            | 2   | 3  | 4  | 5   | 6   | 7  | 8  | 9   | 10  | 11   | 12   | 13   | 14   | 15  | 16   | 17  | 18  | 19   | 20   | 21  | 22  | 23   | 24   | 25   |
| 1            |   |  |  |     | 17.5  | 5.2  | 2.8  | 8.0 | 33.1  | 16.4   | 0.2  | 16.6 | 3,562  | 698   | 48   | 746 | 21.8  | 7.6  | 0.4  | 8.2 |   |  |  |      |
| 2            |   |  |  |     | 13.5  | 9.2  | †1.2   | 8.0 | 31.0  | 18.5   | †1.9   | 16.6 | 3,232  | 1,028   | †282   | 746 | 17.9  | 11.7   | †3.5   | 8.2 |   |  |  |      |
| 3            |   |  |  |     | 15.6  | 7.1  | .9   | 8.0 | 32.2  | 17.3   | †.7  | 16.6 | 3,633  | 627   | 119  | 746 | 22.0  | 7.6  | .6   | 8.2 |   |  |  |      |
| 4            |   |  |  |     | 16.1  | 6.6  | 1.4  | 8.0 | 39.3  | 10.2   | 6.4  | 16.6 | 3,536  | 724   | 22   | 746 | 21.6  | 8.0  | .2   | 8.2 |   |  |  |      |
| 5            |   |  |  |     | 22.4  | .3   | 7.7  | 8.0 | 33.8  | 15.7   | .9   | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 6            |   |  |  |     |   |  |  |     | 35.4  | 14.1   | 2.5  | 16.6 | 3,759  | 501   | 245  | 746 | 22.1  | 7.5  | .7   | 8.2 |   |  |  |      |
| 7            |   |  |  |     |   |  |  |     | 35.8  | 13.7   | 2.9  | 16.6 | 3,747  | 513   | 233  | 746 | 21.3  | 8.3  | †.1  | 8.2 | 25.6  | 10.6   | 4.7  | 13.1 |
| 8            |   |  |  |     | 17.0  | 5.7  | 2.3  | 8.0 | 52.6  | 3.1  | 19.7   | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 9            |   |  |  |     | 15.3  | 7.4  | .6   | 8.0 | 35.0  | 14.5   | 2.1  | 16.6 | 3,578  | 682   | 64   | 746 | 21.1  | 8.5  | †.3  | 8.2 |   |  |  |      |
| 10           |   |  |  |     | 18.0  | 4.7  | 3.3  | 8.0 | 34.5  | 15.0   | 1.6  | 16.6 | 3,714  | 546   | 200  | 746 | 22.1  | 7.5  | .7   | 8.2 |   |  |  |      |
| 11           |   |  |  |     | 17.3  | 5.4  | 2.6  | 8.0 | 38.3  | 11.2   | 5.4  | 16.6 | 3,715  | 545   | 201  | 746 | 21.0  | 8.6  | †.4  | 8.2 |   |  |  |      |
| 12           |   |  |  |     | 18.4  | 4.3  | 3.7  | 8.0 | 34.1  | 15.4   | 1.2  | 16.6 | 3,814  | 446   | 300  | 746 | 22.3  | 7.3  | .9   | 8.2 |   |  |  |      |
| 14           |   |  |  |     | 17.1  | 5.6  | 2.4  | 8.0 | 41.0  | 8.5  | 8.1  | 16.6 | 3,377  | 883   | †137   | 746 | 20.3  | 9.3  | †1.1   | 8.2 |   |  |  |      |
| 15           |   |  |  |     | 18.7  | 4.0  | 4.0  | 8.0 | 34.0  | 15.5   | 1.1  | 16.6 | 2,903  | 1,357   | †611   | 746 | 18.3  | 11.3   | †3.1   | 8.2 |   |  |  |      |
| 16           |   |  |  |     | 17.9  | 4.8  | 3.2  | 8.0 | 41.1  | 8.4  | 8.2  | 16.6 | 3,411  | 849   | †103   | 746 | 19.8  | 9.8  | †1.6   | 8.2 |   |  |  |      |
| 17           |   |  |  |     | 17.9  | 4.8  | 3.2  | 8.0 | 37.5  | 12.0   | 4.6  | 16.6 | 2,985  | 1,275   | †529   | 746 | 18.3  | 11.3   | †3.1   | 8.2 |   |  |  |      |
| 18           |   |  |  |     | 23.0  | *1.3   | 8.3  | 8.0 | 37.4  | 12.1   | 4.5  | 16.6 | 3,134  | 1,126   | †380   | 746 | 20.1  | 9.5  | †1.3   | 8.2 |   |  |  |      |
| 19           |   |  |  |     | 18.4  | 4.3  | 3.7  | 8.0 | 49.7  | *.2  | 16.8   | 16.6 | 3,764  | 496   | 250  | 746 | 22.8  | 6.8  | 1.4  | 8.2 |   |  |  |      |
| 31           |   |  |  |     | 18.3  | 4.4  | 3.6  | 8.0 | 37.4  | 12.1   | 4.5  | 16.6 | 3,900  | 360   | 386  | 746 | 22.6  | 7.0  | 1.2  | 8.2 |   |  |  |      |
| 32           |   |  |  |     | 16.0  | 6.7  | 1.3  | 8.0 | 38.6  | 10.9   | 5.7  | 16.6 | 3,504  | 756   | †10  | 746 | 20.0  | 9.6  | †1.4   | 8.2 |   |  |  |      |
| 33           |   |  |  |     | 15.6  | 7.1  | .9   | 8.0 | 32.5  | 17.0   | †.4  | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 34           |   |  |  |     | 15.3  | 7.4  | .6   | 8.0 | 38.9  | 10.6   | 6.0  | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 42           |   |  |  |     | 16.9  | 5.8  | 2.2  | 8.0 | 30.3  | 19.2   | †2.6   | 16.6 | 3,525  | 735   | 11   | 746 | 19.4  | 10.2   | †2.0   | 8.2 |   |  |  |      |
| 71           |   |  |  |     | 16.2  | 6.5  | 1.5  | 8.0 | 44.6  | 4.9  | 11.7   | 16.6 | 2,783  | 1,477   | †731   | 746 | 16.9  | 12.7   | †4.5   | 8.2 |   |  |  |      |
| 72           |   |  |  |     | 22.0  | .7   | 7.3  | 8.0 | 40.2  | 9.3  | 7.3  | 16.6 | 3,295  | 965   | †219   | 746 | 20.3  | 9.3  | †1.1   | 8.2 |   |  |  |      |
| 75           |   |  |  |     | 22.3  | .4   | 7.6  | 8.0 | 44.7  | 4.8  | 11.8   | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 76           |   |  |  |     | 20.2  | 2.5  | 5.5  | 8.0 | 49.2  | .3   | 16.3   | 16.6 |  |   |  |     |   |  |  |     |   |  |  |      |
| 149          | 27.6  | *5.1   | 12.7   | 7.6 |   |  |  |     |   |  |  |      | 4,483  | *223  | 969  | 746 | 29.4  | .2   | 8.0  | 8.2 |   |  |  |      |
| 408          |   |  |  |     | 27.5  | *4.8   | 12.8   | 8.0 |   |  |  |      | 4,025  | 235   | 511  | 746 | 28.2  | 1.4  | 6.8  | 8.2 |   |  |  |      |
| 409          | 24.0  | *1.5   | 9.1  | 7.6 |   |  |  |     |   |  |  |      |  |   |  |     |   |  |  |     |   |  |  |      |
| 411          | 25.0  | *2.5   | 10.1   | 7.6 |   |  |  |     |   |  |  |      |  |   |  |     |   |  |  |     |   |  |  |      |
| 412          |   |  |  |     |   |  |  |     |   |  |  |      | 4,575  | *315  | 1,061  | 746 | 30.9  | *1.3   | 9.5  | 8.2 |   |  |  |      |
| 413          | 33.7  | *11.2  | 18.8   | 7.6 |   |  |  |     |   |  |  |      |  |   |  |     | 30.7  | *1.1   | 9.3  | 8.2 |   |  |  |      |
| Average....  | 27.6  | *5.1   | 12.7   | 7.6 | 18.2  | 4.5  | 3.5  | 8.0 | 38.2  | 11.3   | 5.3  | 16.6 | 3,581  | 679   | 67   | 746 | 22.0  | 7.6  | .6   | 8.2 | 26.7  | 9.5  | 3.6  | 13.1 |



TABLE 44.—Comparisons of average acre yields from 50 rotations, with corresponding yields from alternate fallow and from continuous cropping at Ardmore, S. Dak., for 14 years, 1913 to 1926

| Rotation No.<br>or plot | Winter wheat                     |  |   |   | Spring wheat                     |  |   |   | Oats                             |  |   |   | Corn total                      |   |  |   | Corn grain                       |  |   |   | Barley                           |  |   |   | Flax  |  |   |     |     |
|-------------------------|----------------------------------|--|---|---|----------------------------------|--|---|---|----------------------------------|--|---|---|---------------------------------|---|--|---|----------------------------------|--|---|---|----------------------------------|--|---|---|---|--|---|-----|-----|
|                         | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (pounds) | Difference in<br>acre yields<br>(pounds)                          |  |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   | Acre yield of rotation (bushels) | Difference in<br>acre yields<br>(bushels)                        |   |   |   |  |   |     |     |
|                         |                                  | Rotation yields less than from alter-<br>nate fallow (mean 19.1) | Rotation yields more than from con-<br>tinuous cropping (mean 11.6) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 10.4) | Rotation yields more than from con-<br>tinuous cropping (mean 11.6) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 36.7) | Rotation yields more than from con-<br>tinuous cropping (mean 24.3) | Alternate fallow yields more than<br>from continuous cropping |                                 | Rotation yields less than from alter-<br>nate fallow (mean 3,645) | Rotation yields more than from con-<br>tinuous cropping (mean 3,498) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 20.7) | Rotation yields more than from con-<br>tinuous cropping (mean 14.9) | Alternate fallow yields more than<br>from continuous cropping |                                  | Rotation yields less than from alter-<br>nate fallow (mean 27.9) | Rotation yields more than from con-<br>tinuous cropping (mean 18.3) | Alternate fallow yields more than<br>from continuous cropping | Rotation yields less than from alter-<br>nate fallow (mean 6.2) | Rotation yields more than from con-<br>tinuous cropping (mean 4.1) | Alternate fallow yields more than<br>from continuous cropping |     |     |
|                         |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   |                                 |   |  |   |                                  |  |   |   |                                  |  |   |   |   |  |   |     |     |
| 1                       | 2                                | 3  | 4   | 5   | 6                                | 7  | 8   | 9   | 10                               | 11   | 12  | 13  | 14                              | 15  | 16   | 17  | 18                               | 19   | 20  | 21  | 22                               | 23   | 24  | 25  | 26  | 27   | 28  | 29  |     |
| 1                       |                                  |  |   |   | 18.5                             | *2.1   | 6.9   | 4.8   | 30.1                             | 6.6  | 5.8   | 12.4  | 3,162                           | 483   | †326   | 157   | 16.2                             | 4.5  | 1.3   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 2                       |                                  |  |   |   | 16.5                             | *1   | 4.9   | 4.8   | 29.6                             | 7.1  | 5.3   | 12.4  | 3,097                           | 548   | †391   | 157   | 16.1                             | 4.6  | 1.2   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 12                      |                                  |  |   |   | 16.0                             | *4   | 4.4   | 4.8   | 27.8                             | 8.9  | 3.5   | 12.4  | 2,883                           | 762   | †605   | 157   | 13.2                             | 7.5  | †1.7  | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 4                       |                                  |  |   |   | 16.7                             | *3   | 5.1   | 4.8   | 33.7                             | 3.0  | 9.4   | 12.4  | 3,163                           | 482   | †325   | 157   | 16.1                             | 4.6  | 1.2   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 5                       |                                  |  |   |   | 19.1                             | *2.7   | 7.5   | 4.8   | 31.0                             | 5.7  | 6.7   | 12.4  |                                 |   |  |   |                                  |  |   |   |                                  |  |   |   |   |  |   |     |     |
| 6                       |                                  |  |   |   |                                  |  |   |   | 33.3                             | 3.4  | 9.0   | 12.4  | 3,304                           | 341   | †184   | 157   | 16.4                             | 4.3  | 1.5   | 5.8   | 25.9                             |  |   |   |   |  |   |     |     |
| 7                       |                                  |  |   |   |                                  |  |   |   | 33.9                             | 2.8  | 9.6   | 12.4  | 3,012                           | 633   | †476   | 157   | 16.3                             | 4.4  | 1.4   | 5.8   | 21.3                             | 2.0  | 7.6   | 9.6   |   |  |   |     |     |
| 8                       |                                  |  |   |   | 12.8                             | 3.6  | 1.2   | 4.8   | 35.8                             | .9   | 11.5  | 12.4  |                                 |   |  |   |                                  |  |   |   |                                  |  |   |   |   |  |   |     |     |
| 9                       |                                  |  |   |   | 13.3                             | 3.1  | 1.7   | 4.8   | 33.0                             | 3.7  | 8.7   | 12.4  | 2,877                           | 768   | †611   | 157   | 14.9                             | 5.8  | 0   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 11                      |                                  |  |   |   | 16.1                             | *3   | 4.5   | 4.8   | 29.8                             | 6.9  | 5.5   | 12.4  | 2,733                           | 912   | †755   | 157   | 12.9                             | 7.8  | †2.0  | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 12                      |                                  |  |   |   | 17.0                             | *6   | 5.4   | 4.8   | 28.9                             | 7.8  | 4.6   | 12.4  | 2,953                           | 692   | †535   | 157   | 13.2                             | 7.5  | †1.7  | 5.8   |                                  |  |   |   |   | 5.1  | 1.1   | 1.0 | 2.1 |
| 13                      |                                  |  |   |   | 18.1                             | *1.7   | 6.5   | 4.8   | 29.5                             | 7.2  | 5.2   | 12.4  | 2,989                           | 656   | †499   | 157   | 15.2                             | 5.5  | .3  | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 14                      |                                  |  |   |   | 19.4                             | *3.0   | 7.8   | 4.8   | 40.7                             | *4.0   | 16.4  | 12.4  | 3,101                           | 544   | †387   | 157   | 15.0                             | 5.7  | .1  | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 15                      |                                  |  |   |   | 19.3                             | *2.9   | 7.7   | 4.8   | 36.7                             | *0   | 12.4  | 12.4  | 3,306                           | 339   | †182   | 157   | 17.4                             | 3.3  | 2.5   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 16                      |                                  |  |   |   | 19.1                             | *2.7   | 7.5   | 4.8   | 37.6                             | *.9  | 13.3  | 12.4  | 3,138                           | 507   | †350   | 157   | 14.7                             | 6.0  | †2.2  | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 17                      |                                  |  |   |   | 21.2                             | *4.8   | 9.6   | 4.8   | 39.8                             | *3.1   | 15.5  | 12.4  | 3,578                           | 67  | 90   | 157   | 17.7                             | 3.0  | 2.8   | 5.8   |                                  |  |   |   |   |  |   |     |     |
| 18                      |                                  |  |   |   |                                  |  |   |   |                                  |  |   |   |                                 |   |  |   |                                  |  |   |   |                                  |  |   |   |   |  |   |     |     |

## ANALYSIS OF RESULTS AT SCOTTSBLUFF, NEBR.

TABLE 45.—Comparisons of average acre yields from 34 rotations, with corresponding yields from alternate fallow and from continuous cropping at Scottsbluff, Nebr., for 10 years, 1912 to 1921

[Summary of Table 61 (p. 103). For descriptions of rotations, see pages 32-43. For climatic conditions, 1912 to 1921, see page 35, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow; a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation<br>No. or<br>plot | Winter wheat                           |   |   |  | Spring wheat                           |   |   |  | Oats                                   |   |  |  | Corn total                            |  |   |  | Corn grain                             |   |  |  | Barley                                 |   |  |  |
|----------------------------|--|---|---|--|--|---|---|--|--|---|--|--|---------------------------------------|--|---|--|--|---|--|--|--|---|--|--|
|                            | Difference in acre<br>yields (bushels) |   |   |  | Difference in acre<br>yields (bushels) |   |   |  | Difference in acre<br>yields (bushels) |   |  |  | Difference in acre<br>yields (pounds) |  |   |  | Difference in acre<br>yields (bushels) |   |  |  | Difference in acre<br>yields (bushels) |   |  |  |
|                            | Acre yield of rotation (bushels)       | Rotation yields less than from alternate fallow (mean 16.7) | Rotation yields more than from continuous cropping (mean 7.6) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)       | Rotation yields less than from alternate fallow (mean 14.3) | Rotation yields more than from continuous cropping (mean 7.1) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)       | Rotation yields less than from alternate fallow (mean 25.7) | Rotation yields more than from continuous cropping (mean 16.6) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (pounds)       | Rotation yields less than from alternate fallow (mean 3,755) | Rotation yields more than from continuous cropping (mean 2,796) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)       | Rotation yields less than from alternate fallow (mean 26.6) | Rotation yields more than from continuous cropping (mean 19.9) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)       | Rotation yields less than from alternate fallow (mean 26.9) | Rotation yields more than from continuous cropping (mean 11.7) | Alternate fallow yields more than from continuous cropping |
| 1                          | 2                                      | 3   | 4   | 5  | 6                                      | 7   | 8   | 9  | 10                                     | 11  | 12   | 13   | 14                                    | 15   | 16  | 17   | 18                                     | 19  | 20   | 21   | 22                                     | 23  | 24   | 25   |
| 1                          |  |   |   |  | 13.0                                   | 1.3   | 5.9   | 7.2  | 18.6                                   | 7.1   | 2.0  | 9.1  | 3,376                                 | 409  | 580   | 989  | 20.1                                   | 5.5   | 0.2  | 5.7  |  |   |  |  |
| 2                          |  |   |   |  | 11.2                                   | 3.1   | 4.1   | 7.2  | 23.9                                   | 1.8   | 7.3  | 9.1  | 3,066                                 | 119  | 870   | 989  | 24.1                                   | 1.5   | 4.2  | 5.7  |  |   |  |  |
| 3                          |  |   |   |  | 12.3                                   | 2.0   | 5.2   | 7.2  | 18.9                                   | 6.8   | 2.3  | 9.1  | 3,163                                 | 622  | 367   | 989  | 19.8                                   | 5.8   | 1.1  | 5.7  |  |   |  |  |
| 4                          |  |   |   |  | 11.0                                   | 3.3   | 3.9   | 7.2  | 20.3                                   | 5.4   | 3.7  | 9.1  | 3,179                                 | 606  | 383   | 989  | 20.1                                   | 5.5   | .2   | 5.7  |  |   |  |  |
| 5                          |  |   |   |  | 16.5                                   | *2.2  | 9.4   | 7.2  | 20.6                                   | 5.1   | 4.0  | 9.1  |                                       |  |   |  |  |   |  |  |  |   |  |  |
| 6                          |  |   |   |  |  |   |   |  | 18.1                                   | 7.6   | 1.5  | 9.1  | 3,146                                 | 639  | 350   | 989  | 19.7                                   | 5.9   | †2   | 5.7  | 15.1                                   | 11.8  | 3.4  | 15.2   |
| 7                          |  |   |   |  |  |   |   |  | 20.6                                   | 5.1   | 4.0  | 9.1  | 3,476                                 | 309  | 680   | 989  | 21.0                                   | 4.6   | 1.1  | 5.7  | 17.3                                   | 9.6   | 5.6  | 15.2   |
| 8                          |  |   |   |  | 9.6                                    | 4.7   | 2.5   | 7.2  | 27.0                                   | *1.3  | 10.4   | 9.1  |                                       |  |   |  |  |   |  |  |  |   |  |  |
| 9                          |  |   |   |  | 10.4                                   | 3.9   | 3.3   | 7.2  | 25.6                                   | *.9   | 10.0   | 9.1  | 3,367                                 | 418  | 571   | 989  | 21.0                                   | 4.6   | 1.1  | 5.7  |  |   |  |  |
| 10                         |  |   |   |  | 12.8                                   | 1.5   | 5.7   | 7.2  | 22.3                                   | 3.4   | 5.7  | 9.1  | 3,351                                 | 434  | 555   | 989  | 20.2                                   | 5.4   | .3   | 5.7  |  |   |  |  |
| 11                         |  |   |   |  | 14.1                                   | .2  | 7.0   | 7.2  | 26.5                                   | *.8   | 9.9  | 9.1  | 3,381                                 | 404  | 585   | 989  | 20.7                                   | 4.9   | .8   | 5.7  |  |   |  |  |
| 12                         |  |   |   |  | 11.9                                   | 2.4   | 4.8   | 7.2  | 22.0                                   | 3.7   | 5.4  | 9.1  | 3,527                                 | 258  | 731   | 989  | 21.2                                   | 4.4   | 1.3  | 5.7  |  |   |  |  |
| 14                         |  |   |   |  | 10.4                                   | 3.9   | 3.3   | 7.2  | 27.0                                   | *1.3  | 10.4   | 9.1  | 3,510                                 | 275  | 714   | 989  | 21.6                                   | 4.0   | 1.7  | 5.7  |  |   |  |  |
| 15                         |  |   |   |  | 15.6                                   | *1.3  | 8.5   | 7.2  | 25.3                                   | *.6   | 9.7  | 9.1  | 3,841                                 | *56  | 1,045   | 989  | 22.2                                   | 3.4   | 2.3  | 5.7  |  |   |  |  |
| 16                         |  |   |   |  | 12.8                                   | 1.5   | 5.7   | 7.2  | 28.3                                   | *2.6  | 11.7   | 9.1  | 3,732                                 | 53   | 936   | 989  | 23.2                                   | 2.4   | 3.3  | 5.7  |  |   |  |  |
| 17                         |  |   |   |  | 14.2                                   | .1  | 7.1   | 7.2  | 25.3                                   | .4  | 8.7  | 9.1  | 3,893                                 | *108   | 1,097   | 989  | 23.3                                   | 2.3   | 3.4  | 5.7  |  |   |  |  |
| 18                         |  |   |   |  | 17.1                                   | *2.8  | 10.0  | 7.2  | 28.9                                   | *3.2  | 12.3   | 9.1  | 3,597                                 | 188  | 801   | 989  | 21.9                                   | 3.7   | 2.0  | 5.7  |  |   |  |  |
| 19                         |  |   |   |  | 11.1                                   | 3.2   | 4.0   | 7.2  | 33.3                                   | *7.6  | 16.7   | 9.1  | 3,624                                 | 161  | 828   | 989  | 21.9                                   | 3.7   | 2.0  | 5.7  |  |   |  |  |
| 40                         |  |   |   |  |  |   |   |  | 23.6                                   | 2.1   | 7.0  | 9.1  | 2,887                                 | 898  | 91  | 989  | 16.9                                   | 8.7   | †3.0   | 5.7  |  |   |  |  |
| 41                         |  |   |   |  | 13.7                                   | .6  | 6.6   | 7.2  | 23.7                                   | 2.0   | 7.1  | 9.1  | 3,623                                 | 162  | 827   | 989  | 22.0                                   | 3.6   | 2.1  | 5.7  |  |   |  |  |
| 42                         |  |   |   |  | 14.5                                   | *.2   | 7.4   | 7.2  | 19.2                                   | 6.5   | 2.6  | 9.1  | 3,424                                 | 361  | 628   | 989  | 19.1                                   | 6.5   | †.8  | 5.7  |  |   |  |  |
| 43                         |  |   |   |  | 12.4                                   | 1.9   | 5.3   | 7.2  | 18.2                                   | 7.5   | 1.6  | 9.1  | 2,614                                 | 1,171  | †182  | 989  | 17.4                                   | 8.2   | †2.5   | 5.7  |  |   |  |  |
| 44                         |  |   |   |  | 12.4                                   | 1.9   | 5.3   | 7.2  |  |   |  |  | 3,282                                 | 503  | 486   | 989  | 22.2                                   | 3.4   | 2.3  | 5.7  |  |   |  |  |
| 45                         |  |   |   |  |  |   |   |  | 25.5                                   | .2  | 8.9  | 9.1  | 3,473                                 | 312  | 677   | 989  | 21.7                                   | 3.9   | 1.8  | 5.7  |  |   |  |  |
| 46                         |  |   |   |  |  |   |   |  | 30.0                                   | *4.3  | 13.4   | 9.1  | 3,453                                 | 332  | 657   | 989  | 21.2                                   | 4.4   | 1.3  | 5.7  |  |   |  |  |
| 47                         |  |   |   |  |  |   |   |  | 26.3                                   | *.6   | 9.7  | 9.1  | 3,005                                 | 780  | 209   | 989  | 18.4                                   | 7.2   | †1.5   | 5.7  |  |   |  |  |
| 48                         |  |   |   |  | 9.8                                    | 4.5   | 2.7   | 7.2  | 22.9                                   | 2.8   | 6.3  | 9.1  |                                       |  |   |  |  |   |  |  |  |   |  |  |
| 49                         |  |   |   |  | 9.6                                    | 4.7   | 2.5   | 7.2  |  |   |  |  | 2,683                                 | 1,102  | †113  | 989  | 15.1                                   | 10.5  | †4.8   | 5.7  |  |   |  |  |
| 114                        | 9.8                                    | 6.9   | 2.8   | 9.7  |  |   |   |  | 30.0                                   | *4.3  | 13.4   | 9.1  | 3,416                                 | 369  | 620   | 989  | 21.2                                   | 4.4   | 1.3  | 5.7  |  |   |  |  |
| 115                        | 13.1                                   | 3.6   | 6.1   | 9.7  |  |   |   |  | 29.1                                   | *3.4  | 12.5   | 9.1  | 3,265                                 | 520  | 469   | 989  | 20.0                                   | 5.6   | .1   | 5.7  |  |   |  |  |
| 116                        | 9.2                                    | 7.5   | 2.2   | 9.7  |  |   |   |  | 26.9                                   | *1.2  | 10.3   | 9.1  | 3,410                                 | 375  | 614   | 989  | 19.6                                   | 6.0   | †.3  | 5.7  |  |   |  |  |
| 117                        | 9.7                                    | 7.0   | 2.7   | 9.7  |  |   |   |  | 25.7                                   | 0   | 9.1  | 9.1  | 3,511                                 | 274  | 715   | 989  | 21.9                                   | 3.7   | 2.0  | 5.7  |  |   |  |  |
| 118                        | 17.1                                   | *.4   | 10.1  | 9.7  |  |   |   |  | 28.1                                   | *2.4  | 11.5   | 9.1  | 3,549                                 | 236  | 753   | 989  | 21.7                                   | 3.9   | 1.8  | 5.7  |  |   |  |  |
| 119                        | 10.3                                   | 6.4   | 3.3   | 9.7  |  |   |   |  | 34.1                                   | *8.4  | 17.5   | 9.1  | 3,425                                 | 360  | 629   | 989  | 19.9                                   | 5.7   | 0  | 5.7  |  |   |  |  |
| Average                    | 11.5                                   | 5.2   | 4.5   | 9.7  | 12.6                                   | 1.7   | 5.5   | 7.2  | 24.9                                   | .8  | 8.3  | 9.1  | 3,382                                 | 403  | 586   | 989  | 20.7                                   | 4.9   | .8   | 5.7  | 16.2                                   | 10.7  | 4.5  | 15.2   |
| E                          |  |   |   |  |  |   |   |  |  |   |  |  | 3,218                                 | 567  | 422   | 989  | 22.3                                   | 3.3   | 2.4  | 5.7  |  |   |  |  |
| F                          |  |   |   |  |  |   |   |  |  |   |  |  | 2,455                                 | 1,330  | †341  | 989  | 17.0                                   | 8.7   | †3.0   | 5.7  |  |   |  |  |
| Average                    |  |   |   |  |  |   |   |  |  |   |  |  | 2,837                                 | 948  | 382   | 989  | 19.7                                   | 6.0   | *†.3   | 5.7  |  |   |  |  |



TABLE 46.—Comparisons of average acre yields from 61 rotations, with corresponding yields from alternate fallow and from continuous cropping at North Platte, Nebr., for 20 years, 1907 to 1926

| Rotation No. | Winter wheat                     |   |  |  | Spring wheat                     |   |  |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  |
|--------------|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|
|              | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  |
|              |                                  | Rotation yields less than from alternate fallow (mean 23.2) | Rotation yields more than from continuous cropping (mean 13.1) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 19.0) | Rotation yields more than from continuous cropping (mean 11.4) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 36.0) | Rotation yields more than from continuous cropping (mean 24.0) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 4,323) | Rotation yields more than from continuous cropping (mean 3,736) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 26.7) | Rotation yields more than from continuous cropping (mean 21.8) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 30.9) | Rotation yields more than from continuous cropping (mean 19.0) | Alternate fallow yields more than from continuous cropping |
|              |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 1            | 2                                | 3   | 4  | 5  | 6                                | 7   | 8  | 9  | 10                               | 11  | 12   | 13   | 14                              | 15   | 16  | 17   | 18                               | 19  | 20   | 21   | 22                               | 23  | 24   | 25   |
| 1            |                                  |   |  |  | 13.1                             | 5.9   | 1.7  | 7.6  | 25.9                             | 10.1  | 1.9  | 12.0   | 4,076                           | 247  | 280   | 527  | 20.2                             | 6.5   | †1.6   | 4.9  |                                  |   |  |  |
| 2            |                                  |   |  |  | 10.5                             | 8.5   | †.9  | 7.6  | 22.3                             | 13.7  | †1.7   | 12.0   | 3,383                           | 940  | †413  | 527  | 15.9                             | 10.8  | †5.9   | 4.9  |                                  |   |  |  |
| 3            |                                  |   |  |  | 13.2                             | 5.8   | 1.5  | 7.6  | 25.8                             | 10.2  | 1.8  | 12.0   | 4,056                           | 267  | 260   | 527  | 19.9                             | 6.8   | †1.9   | 4.9  |                                  |   |  |  |
| 4            |                                  |   |  |  | 11.0                             | 8.0   | †.4  | 7.6  | 25.0                             | 11.0  | 1.0  | 12.0   | 3,802                           | 521  | 6   | 527  | 19.5                             | 7.2   | †2.3   | 4.9  |                                  |   |  |  |
| 5            |                                  |   |  |  | 17.1                             | 1.9   | 5.7  | 7.6  | 23.3                             | 12.7  | †.7  | 12.0   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 6            |                                  |   |  |  |                                  |   |  |  | 26.1                             | 9.9   | 2.1  | 12.0   | 3,885                           | 438  | 89  | 527  | 21.3                             | 5.4   | †.5  | 4.9  |                                  |   |  |  |
| 7            |                                  |   |  |  |                                  |   |  |  | 26.1                             | 9.9   | 2.1  | 12.0   | 3,814                           | 509  | 18  | 527  | 18.3                             | 8.4   | †3.5   | 4.9  | 15.9                             | 15.0  | †3.1   | 11.9   |
| 8            |                                  |   |  |  |                                  |   |  |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 9            |                                  |   |  |  | 13.6                             | 5.4   | 2.2  | 7.6  | 39.6                             | †3.6  | 15.6   | 12.0   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |
| 10           |                                  |   |  |  | 10.5                             | 8.5   | †.9  | 7.6  | 23.8                             | 12.2  | †.2  | 12.0   | 3,874                           | 449  | 78  | 527  | 18.1                             | 8.6   | †3.7   | 4.9  |                                  |   |  |  |
| 11           |                                  |   |  |  | 11.3                             | 7.7   | †.1  | 7.6  | 27.0                             | 9.0   | 3.0  | 12.0   | 3,511                           | 812  | †285  | 527  | 16.6                             | 10.1  | †5.2   | 4.9  |                                  |   |  |  |
| 12           |                                  |   |  |  | 16.8                             | 2.2   | 5.4  | 7.6  | 30.7                             | 5.3   | 6.7  | 12.0   | 4,220                           | 103  | 424   | 527  | 24.8                             | 1.9   | 3.0  | 4.9  |                                  |   |  |  |
| 13           |                                  |   |  |  | 12.0                             | 7.0   | .6   | 7.6  | 30.4                             | 5.6   | 6.4  | 12.0   | 4,103                           | 220  | 307   | 527  | 19.3                             | 7.4   | †2.5   | 4.9  |                                  |   |  |  |
| 14           |                                  |   |  |  | 9.8                              | 9.2   | †1.6   | 7.6  | 22.5                             | 13.5  | †1.5   | 12.0   | 3,899                           | 424  | 103   | 527  | 19.6                             | 7.1   | †2.2   | 4.9  |                                  |   |  |  |
| 15           |                                  |   |  |  | 13.3                             | 5.7   | 1.9  | 7.6  | 22.0                             | 14.0  | 12.0   | 12.0   | 3,507                           | 816  | †289  | 527  | 19.1                             | 7.6   | †2.7   | 4.9  |                                  |   |  |  |
| 16           |                                  |   |  |  | 11.0                             | 8.0   | †.4  | 7.6  | 32.8                             | 3.2   | 8.8  | 12.0   | 3,397                           | 926  | †399  | 527  | 17.1                             | 9.6   | †4.7   | 4.9  |                                  |   |  |  |
| 17           |                                  |   |  |  |                                  |   |  |  | 30.4                             | 5.6   | 6.4  | 12.0   | 5,094                           | *771   | 1,298   | 527  | 26.4                             | 3   | 4.6  | 4.9  |                                  |   |  |  |
| 18           |                                  |   |  |  |                                  |   |  |  | 30.0                             | 6.0   | 6.0  | 12.0   | 4,572                           | *249   | 776   | 527  | 23.5                             | 3.2   | 1.7  | 4.9  |                                  |   |  |  |
| 19           |                                  |   |  |  |                                  |   |  |  | 29.9                             | 6.1   | 5.9  | 12.0   | 4,670                           | *347   | 874   | 527  | 24.9                             | 1.8   | 3.1  | 4.9  |                                  |   |  |  |
| 20           | 24.6                             | *1.4  | 11.5   | 10.1   |                                  |   |  |  | 19.7                             | 16.3  | †4.3   | 12.0   |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |



TABLE 47.—Comparisons of average acre yields from 85 rotations, with corresponding yields from alternate fallow and from continuous cropping at Archer, Wyo., for 13 years, 1914 to 1926

| Rotation No. or plot | Winter wheat                     |   |   |  | Spring wheat                     |   |   |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  | Flax                             |  |   |  |
|----------------------|----------------------------------|---|---|--|----------------------------------|---|---|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|--|---|--|
|                      | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |   |  |
|                      |                                  | Rotation yields less than from alternate fallow (mean 11.3) | Rotation yields more than from continuous cropping (mean 6.2) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 13.4) | Rotation yields more than from continuous cropping (mean 8.5) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 10.4) | Rotation yields more than from continuous cropping (mean 15.0) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 3,083) | Rotation yields more than from continuous cropping (mean 2,857) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 17.0) | Rotation yields more than from continuous cropping (mean 15.4) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 19.0) | Rotation yields more than from continuous cropping (mean 10.9) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 3.6) | Rotation yields more than from continuous cropping (mean 2.7) | Alternate fallow yields more than from continuous cropping |
|                      |                                  | 2   | 3   | 4  |                                  | 5   | 6   | 7  |                                  | 8   | 9  | 10   |                                 | 11   | 12  | 13   |                                  | 14  | 15   | 16   |                                  | 17  | 18   | 19   |                                  | 20   | 21  | 22   |
| 1                    |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 2                    |                                  |   |   |  | 12.6                             | 0.8   | 4.1   | 4.9  | 17.4                             | *2.4  | 7.0  | 4.6  | 2,491                           | 592  | †496  | 96   | 14.1                             | 2.9   | †1.3   | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 3                    |                                  |   |   |  | 11.1                             | 2.3   | 2.6   | 4.9  | 17.6                             | *2.6  | 7.2  | 4.6  | 3,293                           | *210   | 306   | 96   | 16.9                             | .1  | 1.5  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 4                    |                                  |   |   |  | 8.7                              | 4.7   | .2  | 4.9  | 11.3                             | 3.7   | .9   | 4.6  | 2,265                           | 818  | †722  | 96   | 12.3                             | 4.7   | †3.1   | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 5                    |                                  |   |   |  | 9.9                              | 3.5   | 1.4   | 4.9  | 22.0                             | *7.0  | 11.6   | 4.6  | 2,600                           | 483  | †387  | 96   | 14.9                             | 2.1   | 1.5  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 6                    |                                  |   |   |  | 13.5                             | *1  | 5.0   | 4.9  | 14.8                             | *.2   | 4.4  | 4.6  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 7                    |                                  |   |   |  |                                  |   |   |  | 15.2                             | *.2   | 4.8  | 4.6  | 2,250                           | 833  | †737  | 96   | 12.7                             | 4.3   | †2.7   | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 8                    |                                  |   |   |  |                                  |   |   |  | 21.7                             | *6.7  | 11.3   | 4.6  | 3,487                           | *404   | 500   | 96   | 18.4                             | *1.4  | 3.0  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 9                    |                                  |   |   |  | 8.5                              | 4.9   | 0   | 4.9  | 20.0                             | *5.0  | 9.6  | 4.6  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 10                   |                                  |   |   |  | 9.0                              | 4.4   | .5  | 4.9  | 17.2                             | *2.2  | 6.8  | 4.6  | 2,809                           | 274  | †178  | 96   | 15.1                             | 1.9   | †.3  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 11                   |                                  |   |   |  | 11.6                             | 1.8   | 3.1   | 4.9  | 17.9                             | *2.9  | 7.5  | 4.6  | 3,130                           | *47  | 143   | 96   | 16.5                             | .5  | 1.1  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 12                   |                                  |   |   |  | 10.9                             | 2.5   | 2.4   | 4.9  | 20.7                             | *5.8  | 10.4   | 4.6  | 3,306                           | *223   | 319   | 96   | 17.2                             | *.2   | 1.8  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 13                   |                                  |   |   |  | 14.5                             | *1.1  | 6.0   | 4.9  | 20.4                             | *5.4  | 10.0   | 4.6  | 3,114                           | *31  | 127   | 96   | 16.7                             | *.3   | 1.3  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 14                   |                                  |   |   |  | 13.5                             | *1  | 5.0   | 4.9  | 22.0                             | *7.0  | 11.6   | 4.6  | 3,224                           | *141   | 237   | 96   | 17.7                             | *.7   | 2.3  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 15                   |                                  |   |   |  | 14.8                             | *1.4  | 6.3   | 4.9  | 22.8                             | *7.8  | 12.4   | 4.6  | 3,152                           | *69  | 165   | 96   | 18.2                             | *1.2  | 2.8  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 16                   |                                  |   |   |  | 12.8                             | .6  | 4.3   | 4.9  | 21.1                             | *6.1  | 10.7   | 4.6  | 3,036                           | 47   | 49  | 96   | 17.2                             | *.2   | 1.8  | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 17                   |                                  |   |   |  | 13.2                             | .2  | 4.7   | 4.9  |                                  |   |  |  | 2,093                           | 990  | †894  | 96   | 12.7                             | 4.3   | †2.7   | 1.6  |                                  |   |  |  |                                  |  |   |  |
| 18                   |                                  |   |   |  |                                  |   |   |  | 20.3                             | *5.3  | 9.9  | 4.6  | 2,573                           | 510  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |



TABLE 47.—Comparisons of average acre yields from 85 rotations, with corresponding yields from alternate fallow and from continuous cropping at Archer, Wyo., for 13 years, 1914 to 1926—Continued

| Rotation No. or plot | Winter wheat                     |   |   |  | Spring wheat                     |   |   |  | Oats                             |   |  |  | Corn total                      |  |   |  | Corn grain                       |   |  |  | Barley                           |   |  |  | Flax                             |  |   |  |
|----------------------|----------------------------------|---|---|--|----------------------------------|---|---|--|----------------------------------|---|--|--|---------------------------------|--|---|--|----------------------------------|---|--|--|----------------------------------|---|--|--|----------------------------------|--|---|--|
|                      | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (pounds) | Difference in acre yields (pounds)                           |   |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (pushels)                         |  |  | Acre yield of rotation (bushels) | Difference in acre yields (bushels)                        |   |  |
|                      |                                  | Rotation yields less than from alternate fallow (mean 11.3) | Rotation yields more than from continuous cropping (mean 6.2) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 13.4) | Rotation yields more than from continuous cropping (mean 8.5) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 15.0) | Rotation yields more than from continuous cropping (mean 10.4) | Alternate fallow yields more than from continuous cropping |                                 | Rotation yields less than from alternate fallow (mean 3.083) | Rotation yields more than from continuous cropping (mean 2.987) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 17.0) | Rotation yields more than from continuous cropping (mean 13.4) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 19.0) | Rotation yields more than from continuous cropping (mean 10.9) | Alternate fallow yields more than from continuous cropping |                                  | Rotation yields less than from alternate fallow (mean 3.6) | Rotation yields more than from continuous cropping (mean 2.7) | Alternate fallow yields more than from continuous cropping |
|                      |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 1                    | 2                                | 3   | 4   | 5  | 6                                | 7   | 8   | 9  | 10                               | 11  | 12   | 13   | 14                              | 15   | 16  | 17   | 18                               | 19  | 20   | 21   | 22                               | 23  | 24   | 25   | 26                               | 27   | 28  | 29   |
| 583                  |                                  |   |   |  | 10.5                             | 2.9   | 2.0   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 471                  |                                  |   |   |  | 9.5                              | 3.9   | 1.0   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
|                      |                                  |   |   |  | 9.9                              | 3.5   | 1.4   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| Average              | 9.5                              | 1.8   | 3.3   | 5.1  | 11.7                             | 1.7   | 3.2   | 4.9  | 16.9                             | *1.9  | 6.5  | 4.6  | 2,606                           | 477  | †381  | 96   | 14.3                             | 2.7   | †1.1   | 1.6  | 14.4                             | 4.6   | 3.5  | 8.1  | 2.9                              | .7   | .2  | .9   |
| Ea                   | 5.7                              | 5.6   | †5  | 5.1  | 9.2                              | 4.2   | .7  | 4.9  | 9.0                              | 6.0   | †1.4   | 4.6  | 3,225                           | *142   | 238   | 96   | 16.9                             | .1  | 1.5  | 1.6  | 9.6                              | 9.4   | †1.3   | 8.1  | 2.1                              | 1.5  | †6  | .9   |
| Fa                   | 6.1                              | 5.2   | †1  | 5.1  | 7.3                              | 4.2   | †1.2  | 4.9  | 9.4                              | 5.6   | †1.0   | 4.6  | 2,187                           | 896  | †800  | 96   | 10.9                             | 6.1   | †4.5   | 1.6  | 10.1                             | 8.9   | †1.8   | 8.1  | 1.4                              | 2.2  | †1.3  | .9   |
| Average              | 5.9                              | 5.4   | †3  | 5.1  | 8.3                              | 5.1   | †2  | 4.9  | 9.2                              | 5.8   | †1.2   | 4.6  | 2,706                           | 377  | †281  | 96   | 13.9                             | 3.1   | †1.5   | 1.6  | 9.9                              | 9.1   | †1.0   | 8.1  | 1.8                              | 1.8  | †9  | .9   |
| Seeding methods:     |                                  |   |   |  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 1 to 5               | 20.5                             | *9.2  | 14.3  | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 2 to 6               | 19.2                             | *7.9  | 13.0  | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 3 to 7               | 9.6                              | 1.7   | 3.4   | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 4 to 8               | 14.5                             | *3.2  | 8.3   | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 9 to 11              | 13.8                             | *2.5  | 7.6   | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| 10 to 12             | 14.2                             | *2.9  | 8.0   | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| Average              | 15.3                             | *4.0  | 9.1   | 5.1  |                                  |   |   |  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| H or I               |                                  |   |   |  | 10.6                             | 2.8   | 2.1   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| J or K               |                                  |   |   |  | 10.8                             | 2.6   | 2.3   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| L or M               |                                  |   |   |  | 12.3                             | 1.1   | 3.8   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| N or O               |                                  |   |   |  | 11.3                             | 2.1   | 2.8   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |
| Average              |                                  |   |   |  | 11.3                             | 2.1   | 2.8   | 4.9  |                                  |   |  |  |                                 |  |   |  |                                  |   |  |  |                                  |   |  |  |                                  |  |   |  |

## ANALYSIS OF RESULTS AT AKRON, COLO.

TABLE 48.—Comparisons of average acre yields from 52 rotations with corresponding yields from alternate fallow and from continuous cropping at Akron, Colo., for 18 years, 1909 to 1926

[Summary of Table 64 (p. 114). For descriptions of rotations, see pages 32-43. For climatic conditions 1909 to 1924, see page 44, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping, a double dagger (‡) indicates yields from continuous cropping which are more than those from alternate fallow]

| Rotation No. or plot | Winter wheat                        |   |   | Spring wheat                        |   |   | Oats                                |   |  | Corn total                         |  |   | Corn grain                          |   |  | Barley                              |   |  | Milo total                         |  |   | Kafir total                        |  |   | Sorgo total                        |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
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|                      | Difference in acre yields (bushels) |   |   | Difference in acre yields (bushels) |   |   | Difference in acre yields (bushels) |   |  | Difference in acre yields (pounds) |  |   | Difference in acre yields (bushels) |   |  | Difference in acre yields (bushels) |   |  | Difference in acre yields (pounds) |  |   | Difference in acre yields (pounds) |  |   | Difference in acre yields (pounds) |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                      | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 16.8) | Rotation yields more than from continuous cropping (mean 7.5) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 11.3) | Rotation yields more than from continuous cropping (mean 9.0) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 32.5) | Rotation yields more than from continuous cropping (mean 19.0) | Acre yield of rotation (pounds)    | Rotation yields less than from alternate fallow (mean 3,561) | Rotation yields more than from continuous cropping (mean 2,833) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 21.2) | Rotation yields more than from continuous cropping (mean 15.4) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 27.7) | Rotation yields more than from continuous cropping (mean 15.2) | Acre yield of rotation (pounds)    | Rotation yields less than from alternate fallow (mean 2,494) | Rotation yields more than from continuous cropping (mean 3,505) | Acre yield of rotation (pounds)    | Rotation yields less than from alternate fallow (mean 1,613) | Rotation yields more than from continuous cropping (mean 2,408) |                                    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
| 1                    | 2                                   |   |   | 3                                   |   |   | 6                                   |   |  | 7                                  |  |   | 8                                   |   |  | 9                                   |   |  | 10                                 |  |   | 11                                 |  |   | 12                                 |  |  | 13 |  |  | 14 |  |  | 15 |  |  | 16 |  |  | 17 |  |  | 18 |  |  | 19 |  |  | 20 |  |  | 21 |  |  | 22 |  |  | 23 |  |  | 24 |  |  | 25 |  |  | 26 |  |  | 27 |  |  | 28 |  |  | 29 |  |  | 30 |  |  | 31 |  |  | 32 |  |  | 33 |  |  | 34 |  |  | 35 |  |  | 36 |  |  | 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |    |
|                      | 12.5                                | 3.3   | 5.0   | 8.3                                 | 5.8   | 3.3   | 17.2                                | 15.2  | 13.5   | 2,754                              | 807  | 479   | 728                                 | 12.9  | 8.3  | 42.5                                | 5.8   |  |                                    |  |   |                                    |  |   |                                    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |





## ANALYSIS OF RESULTS AT COLBY, KANS.

TABLE 49.—Comparisons of average acre yields from 46 rotations with corresponding yields from alternate fallow and from continuous cropping at Colby, Kans., for 12 years, 1915 to 1926.

[Summary of Table 65 (p. 119). For descriptions of rotations, see pages 32-43. For climatic conditions, 1914 to 1924, see page 45, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping]

| Rotation No.<br>or plot | Winter wheat                              |   |  |  | Spring wheat                              |   |   |  | Oats                                      |   |  |  | Corn total                               |  |   |  | Corn grain                                |   |  |  | Barley                                    |   |  |  | Milo grain                                |   |  |  |
|-------------------------|---|---|--|--|---|---|---|--|---|---|--|--|--|--|---|--|---|---|--|--|---|---|--|--|---|---|--|--|
|                         | Difference in<br>acre yields<br>(bushels) |   |  |  | Difference in<br>acre yields<br>(bushels) |   |   |  | Difference in<br>acre yields<br>(bushels) |   |  |  | Difference in<br>acre yields<br>(pounds) |  |   |  | Difference in<br>acre yields<br>(bushels) |   |  |  | Difference in<br>acre yields<br>(bushels) |   |  |  | Difference in<br>acre yields<br>(bushels) |   |  |  |
|                         | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 20.8) | Rotation yields more than from continuous cropping (mean 10.6) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 11.2) | Rotation yields more than from continuous cropping (mean 7.0) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 20.2) | Rotation yields more than from continuous cropping (mean 17.4) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (pounds)          | Rotation yields less than from alternate fallow (mean 4,335) | Rotation yields more than from continuous cropping (mean 2,833) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 28.6) | Rotation yields more than from continuous cropping (mean 19.2) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 34.4) | Rotation yields more than from continuous cropping (mean 20.9) | Alternate fallow yields more than from continuous cropping | Acre yield of rotation (bushels)          | Rotation yields less than from alternate fallow (mean 25.9) | Rotation yields more than from continuous cropping (mean 12.2) | Alternate fallow yields more than from continuous cropping |
| 1                       | 2   | 3   | 4  | 5  | 6   | 7   | 8   | 9  | 10  | 11  | 12   | 13   | 14                                       | 15   | 16  | 17   | 18  | 19  | 20   | 21   | 22  | 23  | 24   | 25   | 26  | 27  | 28   | 29   |
| 1                       |   |   |  |  | 6.9                                       | 4.3   | †0.1  | 4.2  | 18.6                                      | 10.6  | 1.2  | 11.8   | 2,914                                    | 1,421  | 81  | 1,502  | 17.5                                      | 11.1  | †1.7   | 9.4  |   |   |  |  |   |   |  |  |
| 2                       |   |   |  |  | 7.5                                       | 3.7   | .5  | 4.2  | 19.5                                      | 9.7   | 2.1  | 11.8   | 3,822                                    | 513  | 989   | 1,502  | 24.5                                      | 4.1   | 5.3  | 9.4  |   |   |  |  |   |   |  |  |
| 3                       |   |   |  |  | 5.7                                       | 5.5   | †1.3  | 4.2  | 16.7                                      | 12.5  | †7.7   | 11.8   | 2,834                                    | 1,501  | 1   | 1,502  | 17.0                                      | 11.6  | †2.2   | 9.4  |   |   |  |  |   |   |  |  |
| 4                       |   |   |  |  | 7.4                                       | 3.8   | .4  | 4.2  | 17.9                                      | 11.3  | .5   | 11.8   | 3,022                                    | 1,313  | 189   | 1,502  | 18.2                                      | 10.4  | †1.0   | 9.4  |   |   |  |  |   |   |  |  |
| 5                       |   |   |  |  | 9.4                                       | 1.8   | 2.4   | 4.2  | 20.3                                      | 8.9   | 2.9  | 11.8   |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 6                       |   |   |  |  |   |   |   |  | 14.6                                      | 14.6  | †2.8   | 11.8   | 2,661                                    | 1,674  | †172  | 1,502  | 14.6                                      | 14.0  | †4.6   | 9.4  | 16.8                                      | 17.6  | †3.2   | 14.4   |   |   |  |  |
| 7                       |   |   |  |  |   |   |   |  | 13.3                                      | 15.9  | †4.1   | 11.8   | 3,093                                    | 1,242  | 260   | 1,502  | 16.8                                      | 11.8  | †2.4   | 9.4  | 19.1                                      | 15.3  | †7.9   | 14.4   |   |   |  |  |
| 8                       |   |   |  |  | 7.6                                       | 3.6   | .6  | 4.2  | 27.3                                      | 1.9   | 9.9  | 11.8   |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 9                       |   |   |  |  | 6.5                                       | 4.7   | †5.5  | 4.2  | 14.9                                      | 14.3  | †2.5   | 11.8   | 2,712                                    | 1,623  | †121  | 1,502  | 19.0                                      | 9.6   | .2   | 9.4  |   |   |  |  |   |   |  |  |
| 151                     | 21.9                                      | *1.1  | 11.3   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 23.5                                      | 2.4   | 11.3   | 13.7   |
| 152                     | 12.8                                      | 8.0   | 2.2  | 10.2   |   |   |   |  |   |   |  |  | 1,667                                    | 2,668  | †1,166  | 1,502  | 10.7                                      | 17.9  | †8.5   | 9.4  |   |   |  |  | 21.4                                      | 4.5   | 9.2  | 13.7   |
| 153                     | 20.5                                      | .3  | 9.9  | 10.2   |   |   |   |  |   |   |  |  | 1,670                                    | 2,665  | †1,163  | 1,502  | 12.5                                      | 16.1  | †6.7   | 9.4  |   |   |  |  | 12.6                                      | 13.3  | .4   | 13.7   |
| 154                     | 20.0                                      | .8  | 9.4  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 23.8                                      | 2.1   | 11.6   | 13.7   |
| 155                     | 20.0                                      | .8  | 9.4  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 27.8                                      | *1.9  | 15.6   | 13.7   |
| 156                     | 20.2                                      | .6  | 9.6  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 27.9                                      | *2.0  | 15.7   | 13.7   |
| 257                     | 11.5                                      | 9.3   | .9   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 11.0                                      | 14.9  | †1.2   | 13.7   |
| 259                     | 14.5                                      | 6.3   | 3.9  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 406                     | 9.4                                       | 11.4  | †1.2   | 10.2   |   |   |   |  |   |   |  |  | 2,856                                    | 1,479  | 23  | 1,502  | 18.7                                      | 9.9   | †5.9   | 9.4  | 10.9                                      | 23.5  | †9.1   | 14.4   |   |   |  |  |
|                         | 9.1                                       | 11.7  | †1.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 407                     | 9.3                                       | 11.5  | †1.3   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  | 11.5                                      | 22.9  | †8.5   | 14.4   | 11.3                                      | 14.6  | .9   | 13.7   |
|                         | 8.4                                       | 12.4  | †2.2   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 501                     | 23.0                                      | *2.2  | 12.4   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 15.1                                      | 10.8  | †2.9   | 13.7   |
| 502                     | 22.2                                      | *1.4  | 11.6   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 14.4                                      | 11.5  | 2.2  | 13.7   |
| 503                     | 23.1                                      | *2.3  | 12.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 14.9                                      | 11.0  | 2.7  | 13.7   |
| 504                     | 22.9                                      | *2.1  | 12.3   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 14.7                                      | 11.2  | 2.5  | 13.7   |
| 505                     | 25.2                                      | *4.4  | 14.6   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 13.1                                      | 12.8  | .9   | 13.7   |
| 506                     | 24.7                                      | *3.9  | 14.1   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 12.0                                      | 13.9  | †.2  | 13.7   |
| 507                     | 20.8                                      | 0   | 10.2   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 14.0                                      | 11.9  | 1.8  | 13.7   |
| 508                     | 17.5                                      | 3.3   | 6.9  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 11.2                                      | 14.7  | †1.0   | 13.7   |
| 509                     | 21.6                                      | *.8   | 11.0   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 12.3                                      | 13.6  | .1   | 13.7   |
| 510                     | 24.1                                      | *3.3  | 13.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 10.6                                      | 15.3  | †1.6   | 13.7   |
| 551                     | 27.9                                      | *7.1  | 17.3   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 13.6                                      | 12.3  | 1.4  | 13.7   |
| 552                     | 23.1                                      | *2.3  | 12.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 10.6                                      | 15.3  | †1.6   | 13.7   |
| 553                     | 24.2                                      | *3.4  | 13.6   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 13.0                                      | 12.9  | .8   | 13.7   |
| 554                     | 24.7                                      | *3.9  | 14.1   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 12.5                                      | 13.4  | .3   | 13.7   |
| 555                     | 26.2                                      | *5.4  | 15.6   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 11.4                                      | 14.5  | †.8  | 13.7   |
| 556                     | 25.1                                      | *4.3  | 14.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 10.9                                      | 15.0  | †1.3   | 13.7   |
| 557                     | 23.6                                      | *2.8  | 13.0   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 11.3                                      | 14.6  | †.9  | 13.7   |
| 558                     | 24.1                                      | *3.3  | 13.5   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 13.3                                      | 12.6  | 1.1  | 13.7   |
| 559                     | 22.6                                      | *1.8  | 12.0   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 12.8                                      | 13.1  | .6   | 13.7   |
| 560                     | 21.4                                      | *.6   | 10.8   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 13.7                                      | 12.2  | 1.5  | 13.7   |
| 574                     | 11.3                                      | 9.5   | .7   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
|                         | 9.7                                       | 11.1  | †.9  | 10.2   |   |   |   |  |   |   |  |  | 3,101                                    | 1,234  | 268   | 1,502  | 20.3                                      | 8.3   | 1.1  | 9.4  |   |   |  |  |   |   |  |  |
| 574c                    | 10.2                                      | 10.6  | †.4  | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| 575                     | 9.3                                       | 11.5  | †1.3   | 10.2   |   |   |   |  |   |   |  |  | 2,903                                    | 1,432  | 70  | 1,502  | 17.5                                      | 11.1  | †1.7   | 9.4  |   |   |  |  |   |   |  |  |
|                         | 8.4                                       | 12.4  | †2.2   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  | 12.0                                      | 13.9  | †.2  | 13.7   |
| Average.....            | 18.8                                      | 2.0   | 8.2  | 10.2   | 7.3                                       | 3.9   | .3  | 4.2  | 18.1                                      | 11.1  | .7   | 11.8   | 2,771                                    | 1,564  | †62   | 1,502  | 17.3                                      | 11.3  | †1.9   | 9.4  | 14.6                                      | 19.8  | †5.4   | 14.4   | 14.7                                      | 11.2  | 2.5  | 13.7   |
| 571                     | 7.6                                       | 13.2  | †3.0   | 10.2   |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |
| I.1                     |   |   |  |  |   |   |   |  |   |   |  |  |  |  |   |  |   |   |  |  |   |   |  |  |   |   |  |  |

1 Continuous stubbling in.



**TABLE 50.**—*Comparisons of average acre yields from 125 rotations, with corresponding yields from alternate fallow and from continuous cropping at Hays, Kans., for 20 years, 1907 to 1926*

(Summary of Table 66 (p. 122). For descriptions of rotations, see pages 32-43. Replicated rotations are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climate conditions 1967 to 1974 see page 49, Miscellaneous Circular No. 81. An asterisk (\*) indicates yields from rotations which are more than those from alternate fallow, a dagger (†) indicates yields from rotations which are less than those from continuous cropping.)

[illegible]

## ANALYSIS OF RESULTS AT HAYS, KANS.—Continued

TABLE 50.—Comparisons of average acre yields from 125 rotations, with corresponding yields from alternate fallow and from continuous cropping at Hays, Kans., for 20 years, 1907 to 1926—Continued

| Rotation No. or plot | Winter wheat                        |   |  | Spring wheat  |  |   | Oats                                |   |  | Corn total  |                                 |  | Corn grain  |  |                                  | Barley  |  |  | Milo grain                          |   |  | Kafir total   |                                 |  | Kafir grain   |  |      |      |       |       |     |       |      |      |     |      |  |
|----------------------|-------------------------------------|---|--|---|--|---|-------------------------------------|---|--|---|---------------------------------|--|---|--|----------------------------------|---|--|--|-------------------------------------|---|--|---|---------------------------------|--|---|--|------|------|-------|-------|-----|-------|------|------|-----|------|--|
|                      | Difference in acre yields (bushels) |   |  | Difference in acre yields (bushels)                               |  |   | Difference in acre yields (bushels) |   |  | Difference in acre yields (pounds)                                |                                 |  | Difference in acre yields (bushels)                             |  |                                  | Difference in acre yields (bushels)                         |  |  | Difference in acre yields (bushels) |   |  | Difference in acre yields (pounds)                                |                                 |  | Difference in acre yields (bushels)                             |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 22.1) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than continuous cropping (mean 10.1) | Rotation yields less than from alternate fallow (mean 8.3) | Rotation yields more than from continuous cropping (mean 5.6) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 23.3) | Rotation yields more than from continuous cropping (mean 18.0) | Alternate fallow yields more than continuous cropping (mean 10.3) | Acre yield of rotation (pounds) | Rotation yields less than from alternate fallow (mean 3,864) | Rotation yields more than from continuous cropping (mean 2,777) | Alternate fallow yields more than continuous cropping (mean 9.0) | Acre yield of rotation (bushels) | Rotation yields less than from alternate fallow (mean 24.8) | Rotation yields more than from continuous cropping (mean 15.8) | Alternate fallow yields more than continuous cropping (mean 9.0) | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 30.5) | Rotation yields more than from continuous cropping (mean 14.1) | Alternate fallow yields more than continuous cropping (mean 14.1) | Acre yield of rotation (pounds) | Rotation yields less than from alternate fallow (mean 7,708) | Rotation yields more than from continuous cropping (mean 4,906) | Alternate fallow yields more than continuous cropping (mean 5.3) |      |      |       |       |     |       |      |      |     |      |  |
| 1                    | 2                                   | 3   | 4  | 5   | 6  | 7   | 8                                   | 9   | 10   | 11  | 12                              | 13   | 14  | 15   | 16                               | 17  | 18   | 19   | 20                                  | 21  | 22   | 23  | 24                              | 25   | 26  | 27   | 28   | 29   | 30    | 31    | 32  | 33    | 34   | 35   | 36  | 37   |  |
|                      | 22.0                                | 1.1   | 10.0   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 23.9                                | 1.8   | 11.9   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 24.7                                | 2.6   | 12.7   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 20.6                                | 1.5   | 8.6  | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 22.1                                | 0   | 10.1   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 23.8                                | 1.7   | 11.8   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 23.9                                | 1.8   | 11.9   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 23.6                                | 1.5   | 11.6   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 23.0                                | 0.9   | 11.0   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 22.5                                | 0.4   | 10.5   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 568                                 | 23.1  | 1.0  | 11.1  | 10.1   |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
| Average              | 26.9                                | 4.8   | 14.9   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 21.4                                | 3.7   | 9.4  | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 22.3                                | 2   | 10.3   | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 14.0                                | 8.1   | 2.0  | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 15.6                                | 6.5   | 3.0  | 10.1  |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | 20.8                                | 1.3   | 8.8  | 10.1  | 6.6  | 1.7   | 1.0                                 | 2.7   | 22.1   | 6.2   | 4.1                             | 10.3   | 2.888   | 976  | 111                              | 1,087   | 6.0  | 5.6  | 4                                   | 6.0   | 20.5   | 4.3   | 4.7                             | 9.0  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      |                                     |   |  |   |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | Fa                                  | 17.6  | 4.5  | 5.6   | 10.1   | 7.0   | 1.3                                 | 1.4   | 2.7  | 23.9  | 4.4                             | 5.9  | 10.3  | 3,050  | 814                              | 273   | 1,097  | 8.4  | 3.2                                 | 2.8   | 6.0  | 18.4  | 0.4                             | 2.6  | 9.0   | 15.3   | 15.2 | 16.4 | 5,568 | 2,140 | 662 | 2,802 | 19.5 | 8.3  | 5.1 | 13.4 |  |
|                      | Fa                                  | 17.3  | 4.8  | 5.3   | 10.1   | 6.7   | 1.6                                 | 1.1   | 2.7  | 23.7  | 4.6                             | 5.7  | 10.3  | 2,886  | 1,028                            | 59  | 1,087  | 7.9  | 3.7                                 | 2.3   | 0.0  | 15.8  | 9.0                             | 0  | 9.0   | 12.5   | 18.0 | 16.4 | 4,973 | 7,734 | 68  | 2,802 | 17.0 | 10.8 | 2.6 | 13.4 |  |
|                      | G                                   |   |  |   |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | W                                   |   |  |   |  |   |                                     |   |  |   |                                 |  |   |  |                                  |   |  |  |                                     |   |  |   |                                 |  |   |  |      |      |       |       |     |       |      |      |     |      |  |
|                      | Average                             | 17.5  | 4.6  | 5.5   | 10.1   | 6.9   | 1.4                                 | 1.3   | 2.7  | 23.8  | 4.5                             | 5.8  | 10.3  | 2,943  | 921                              | 166   | 1,087  | 8.2  | 3.4                                 | 2.6   | 6.0  | 17.1  | 7.7                             | 1.3  | 9.0   | 13.8   | 16.7 | 16.4 | 5,128 | 2,580 | 222 | 2,802 | 16.8 | 11.0 | 2.4 | 13.4 |  |



SUMMARY OF COMPARISONS OF ADDITIONAL ROTATIONS CONTAINING WINTER WHEAT

| Rotation No. | Difference in acre yields (bushels) |   |  |  | Rotation No.<br>(seed bed; disk drill used) | Difference in acre yields (bushels) |   |  |  | Rotation No.<br>(seed bed; furrow drill used) | Difference in acre yields (bushels) |   |  |  | Rotation No.<br>(seed bed; furrow drill used) | Difference in acre yields (bushels) |   |  |  |         |      |      |      |      |
|--------------|-------------------------------------|---|--|--|---|-------------------------------------|---|--|--|---|-------------------------------------|---|--|--|---|-------------------------------------|---|--|--|---------|------|------|------|------|
|              | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 22.1) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than from continuous cropping |   | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 22.1) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than from continuous cropping |   | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 22.1) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than from continuous cropping |   | Acre yield of rotation (bushels)    | Rotation yields less than from alternate fallow (mean 22.1) | Rotation yields more than from continuous cropping (mean 12.0) | Alternate fallow yields more than from continuous cropping |         |      |      |      |      |
| 1            | 2                                   | 3   | 4  | 5  | 1   | 2                                   | 3   | 4  | 5  | 1   | 2                                   | 3   | 4  | 5  | 1   | 2                                   | 3   | 4  | 5  | 1       | 2    | 3    | 4    | 5    |
| H or I       | 23.4                                | *1.3  | 11.4   | 10.1   | 606-A                                       | 15.2                                | 6.9   | 3.2  | 10.1   | SH-1  | 3.0                                 | 19.1  | 16.0   | 10.1   | SH-1  | 9.7                                 | 12.4  | 12.3   | 10.1   | SH-1    | 9.7  | 12.4 | 12.3 | 10.1 |
| J or K       | 23.8                                | *1.7  | 11.8   | 10.1   | 606-B                                       | 17.5                                | 4.6   | 3.7  | 10.1   | SH-2  | 15.7                                | 6.4   | 3.7  | 10.1   | SH-2  | 11.4                                | 10.7  | 15.0   | 10.1   | SH-2    | 11.4 | 10.7 | 15.0 | 10.1 |
| L or M       | 24.5                                | *2.4  | 12.5   | 10.1   | 606-C                                       | 18.7                                | 3.4   | 6.7  | 10.1   | SH-3  | 16.0                                | 5.2   | 3.8  | 10.1   | SH-3  | 7.0                                 | 15.1  | 12.4   | 10.1   | SH-3    | 7.0  | 15.1 | 12.4 | 10.1 |
| N or O       | 21.8                                | *3.3  | 9.8  | 10.1   | 606-D                                       | 23.7                                | 4.1   | 6.0  | 10.1   | SH-4  | 18.8                                | 6.3   | 3.8  | 10.1   | SH-4  | 9.7                                 | 15.4  | 12.4   | 10.1   | SH-4    | 9.7  | 15.4 | 12.4 | 10.1 |
| P or Q       | 24.7                                | *2.6  | 12.7   | 10.1   | 606-E                                       | 18.6                                | 3.5   | 6.6  | 10.1   | SH-5  | 18.4                                | 3.7   | 6.2  | 10.1   | SH-5  | 16.7                                | 5.4   | 4.7  | 10.1   | SH-5    | 16.7 | 5.4  | 4.7  | 10.1 |
| R or S       | 24.7                                | *2.6  | 12.7   | 10.1   | 606-F                                       | 18.3                                | 2.8   | 7.3  | 10.1   | SH-6  | 18.4                                | 3.9   | 6.2  | 10.1   | SH-6  | 15.6                                | 6.5   | 3.6  | 10.1   | SH-6    | 15.6 | 6.5  | 3.6  | 10.1 |
|              |                                     |   |  |  | 610-A                                       | 23.4                                | 1.2   | 8.9  | 10.1   | SH-7  | 16.0                                | 6.1   | 4.0  | 10.1   | SH-7  | 13.9                                | 8.2   | 1.9  | 10.1   | SH-7    | 13.9 | 8.2  | 1.9  | 10.1 |
|              |                                     |   |  |  | 610-B                                       | 20.9                                | 1.2   | 7.5  | 10.1   | SH-8  | 15.2                                | 6.9   | 3.2  | 10.1   | SH-8  | 14.2                                | 7.9   | 2.2  | 10.1   | SH-8    | 14.2 | 7.9  | 2.2  | 10.1 |
|              |                                     |   |  |  | 610-C                                       | 19.5                                | 2.6   | 7.5  | 10.1   | SH-9  | 18.6                                | 3.5   | 6.6  | 10.1   | SH-9  | 15.1                                | 7.0   | 3.1  | 10.1   | SH-9    | 15.1 | 7.0  | 3.1  | 10.1 |
|              |                                     |   |  |  | 610-D                                       | 18.6                                | 3.5   | 6.6  | 10.1   | SH-10   | 19.6                                | 2.5   | 7.6  | 10.1   | SH-10   | 17.0                                | 5.1   | 5.0  | 10.1   | SH-10   | 17.0 | 5.1  | 5.0  | 10.1 |
|              |                                     |   |  |  | 611-A                                       | 23.9                                | *1.8  | 11.9   | 10.1   | SH-11   | 16.1                                | 9.0   | 4.1  | 10.1   | SH-11   | 17.0                                | 5.1   | 5.0  | 10.1   | SH-11   | 17.0 | 5.1  | 5.0  | 10.1 |
|              |                                     |   |  |  | 611-B                                       | 20.0                                | 2.1   | 8.0  | 10.1   | SH-12   | 15.1                                | 6.0   | 4.1  | 10.1   | SH-12   | 17.0                                | 5.1   | 5.0  | 10.1   | SH-12   | 17.0 | 5.1  | 5.0  | 10.1 |
|              |                                     |   |  |  | 611-C                                       | 17.4                                | 4.7   | 5.4  | 10.1   |   |                                     |   |  |  |   |                                     |   |  |  |         |      |      |      |      |
|              |                                     |   |  |  | 611-D                                       | 23.3                                | *1.2  | 11.3   | 10.1   |   |                                     |   |  |  |   |                                     |   |  |  |         |      |      |      |      |
|              |                                     |   |  |  | 611-E                                       | 24.3                                | *2.2  | 12.3   | 10.1   |   |                                     |   |  |  |   |                                     |   |  |  |         |      |      |      |      |
| Average      | 23.8                                | *1.7  | 11.8   | 10.1   | Average                                     | 17.9                                | 4.2   | 5.9  | 10.1   | Average                                       | 16.2                                | 5.9   | 4.2  | 10.1   | Average                                       | 13.4                                | 8.7   | 1.4  | 10.1   | Average | 13.4 | 8.7  | 1.4  | 10.1 |

# DETAILED CROP YIELDS AT 23 FIELD STATIONS IN THE GREAT PLAINS AREA

The tables, numbered from 51 to 73, which follow are self-explanatory. They give in detail each of the crop yields from each of the field stations, for each of the crops, for each of the years since these field investigations were inaugurated in 1906 to and including 1926.

Each of these 23 tables contains all the crop yields for all of the crops and for all of the methods of tillage and crop rotation involved in these investigations at the designated station. The designations by numbers or letters or by combinations of numbers and letters in the first (left-hand) column for each series of yields indicate the methods of tillage and crop rotation to which it belongs and which is described in "Outlines of rotations and tillage methods" (pp. 32 to 43). The subdivision of the tables by crops is also indicated by the respective crop names in this first column.

The designations in the second column indicate the immediately preceding crop in the rotation and the designations in the third column indicate the methods of tillage. For further information reference should be made to the "Outlines of rotations and tillage methods" (pp. 32 to 43).

In calculating the sums shown in the second column from the right-hand side of the tables and the averages in the last (right-hand) column the first year's results are omitted from the calculation, although the figures appear in the tables.

A complete record of the precipitation by 5-day, monthly, and annual periods up to and including the year 1924 are given in Figures 2 to 46, inclusive, in Miscellaneous Circular No. 81. Additional information concerning climatic and agronomic conditions for each crop year for all stations up to and including 1924 will be found in the text adjoining the respective figures.

For the 16 northern field stations the results given in Tables 51 to 66 have been summarized in Tables 35 to 50.

In order to facilitate these cross references the accompanying list of citations has been prepared.

Mention has already been made of the numerous cross references made to the data contained in this supplement and in Miscellaneous Circular No. 81. It will be found that these citations constitute a comprehensive index to all the data in the Office of Dry-Land Agriculture bearing directly upon the crop yields and the meteorological phases of crop rotation and tillage methods in the Great Plains area. By their use the farmer, the student, and the investigator will have at their command reliable data upon the agricultural

problems of the Great Plains far exceeding those heretofore brought together.

## List of citations to meteorological data, analyses of results, and detailed crop yields

| Field station          | Citations in<br>Miscellaneous<br>Circular No.<br>81—Meteorological data |      | Citations in this supplement |      |                      |      |
|------------------------|---|------|------------------------------|------|----------------------|------|
|                        | Text figure   | Page | Analyses of results          |      | Detailed crop yields |      |
|                        |   |      | Table                        | Page | Table                | Page |
| Williston, N. Dak.     | 2   | 6    | 35                           | 44   | 51                   | 64   |
| Assiniboine, Mont.     | 4   | 8    | 36                           | 45   | 52                   | 66   |
| Moccasin, Mont.        | 6   | 12   | 37                           | 46   | 53                   | 71   |
| Huntley, Mont.         | 8   | 14   | 38                           | 47   | 54                   | 76   |
| Dickinson, N. Dak.     | 10  | 16   | 39                           | 48   | 55                   | 80   |
| Mandan, N. Dak.        | 12  | 20   | 40                           | 49   | 56                   | 84   |
| Edgeley, N. Dak.       | 14  | 22   | 41                           | 50   | 57                   | 89   |
| Sheridan, Wyo.         | 16  | 26   | 42                           | 51   | 58                   | 92   |
| Belle Fourche, S. Dak. | 18  | 28   | 43                           | 52   | 59                   | 96   |
| Ardmore, S. Dak.       | 20  | 32   | 44                           | 53   | 60                   | 100  |
| Scotts Bluff, Nebr.    | 22  | 34   | 45                           | 54   | 61                   | 103  |
| North Platte, Nebr.    | 24  | 36   | 46                           | 55   | 62                   | 106  |
| Archer, Wyo.           | 26  | 40   | 47                           | 56   | 63                   | 110  |
| Akron, Colo.           | 28  | 42   | 48                           | 58   | 64                   | 114  |
| Colby, Kans.           | 30  | 46   | 49                           | 60   | 65                   | 119  |
| Hays, Kans.            | 32  | 48   | 50                           | 61   | 66                   | 122  |
| Garden City, Kans.     | 34  | 52   |                              |      | 67                   |      |
| Woodward, Okla.        | 36  | 54   |                              |      | 68                   |      |
| Dalhart, Tex.          | 38  | 58   |                              |      | 69                   |      |
| Tucumcari, N. Mex.     | 40  | 62   |                              |      | 70                   |      |
| Amarillo, Tex.         | 42  | 64   |                              |      | 71                   |      |
| Lawton, Okla.          | 44  | 68   |                              |      | 72                   |      |
| Big Spring, Tex.       | 46  | 70   |                              |      | 73                   |      |

Anyone interested in the agricultural development of any locality in the Great Plains area can readily select those field stations most nearly representative of the soil and climatic conditions of the locality in which he is particularly interested. He can select such rotations as seem best adapted to his wants and conditions and can make comparisons between such rotations and methods as he chooses. If he can visit some of the field stations during the growing season and examine the plots and note the differences in the growing crops and the conditions of the soil due to different systems of tillage and crop sequence, he will find much that will interest and instruct him. He will find a trained scientist in charge of the work at each station who will be very willing to give him full information about many details of the work not contained in any publication. If he desires still further information the Office of Dry Land Agriculture, Bureau of Plant Industry, Department of Agriculture, Washington, D. C., will furnish such as it has upon request. Visitors who are interested in these investigations are always welcome at the Washington office as well as at the field stations.

## CROP YIELDS AT THE WILLISTON (N. DAK.) FIELD STATION

TABLE 51.—Annual acre yields of specified crops grown in rotations on individual plots at Williston, N. Dak., in one or more years from 1909 to 1920

[For descriptions of rotations, see pages 32-43. For climatic conditions 1909 to 1920, see Figure 2 (p. 6), Miscellaneous Circular No. 81. Yields of total weight of corn and of brome grass are given in pounds; all other yields are stated in bushels]

| Crop and rotation<br>No. or plot | Previous crop | Tillage method     | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | Total | Average |
|----------------------------------|---------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>SPRING WHEAT</b>              |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A. ....                          | Wheat.....    | Spring plowed..... | 21.3 | 1.7  | 2.7  | 25.2 | 16.8 | 23.8 | 19.2 | 23.2 | 7.3  | 2.8  | 3.1  | 7.5  | 133.3 | 12.1    |
| B. ....                          | do.....       | Fall plowed.....   | 19.8 | 1.3  | 2.3  | 33.8 | 11.7 | 22.5 | 14.5 | 24.3 | 4.2  | 2.7  | 2.8  | 6.0  | 126.1 | 11.5    |
| Average.....                     |               |                    |      | 1.5  | 2.5  | 29.5 | 14.3 | 23.2 | 16.9 | 23.8 | 5.8  | 2.8  | 3.0  | 6.8  | 129.7 | 11.8    |
| C or D.....                      | Fallow.....   | Fallowed.....      | 30.7 | 4.2  | 7.6  | 39.7 | 16.5 | 31.2 | 27.7 | 28.0 | 12.5 | 10.1 | 6.3  | 20.7 | 204.5 | 18.6    |
| 1.....                           | Corn.....     | Disked.....        | 26.3 | 1.2  | 5.2  | 34.7 | 14.4 | 21.8 | 16.2 | 29.2 | 10.2 | 4.5  | 3.5  | 14.0 | 154.9 | 14.1    |
| 2.....                           | do.....       | Spring plowed..... | 30.0 | .7   | 5.5  | 38.2 | 14.4 | 26.8 | 16.6 | 23.8 | 10.0 | 2.0  | 4.7  | 18.0 | 160.7 | 14.6    |
| 3.....                           | do.....       | Fall plowed.....   | 25.8 | .7   | 1.8  | 36.5 | 16.1 | 23.3 | 13.0 | 28.7 | 9.7  | 2.7  | 6.0  | 7.5  | 146.0 | 13.3    |
| 4.....                           | Oats.....     | do.....            | 32.3 | .5   | 2.1  | 38.0 | 9.4  | 33.2 | 30.2 | 26.2 | 19.3 | 3.1  | 3.5  | 24.8 | 190.3 | 17.3    |
| 5.....                           | Fallow.....   | Fallowed.....      | 20.2 | 3.8  | 6.3  | 38.2 | 16.8 | 27.0 | 29.6 | 24.5 | 11.2 | 7.0  | 4.8  | 11.5 | 180.7 | 16.4    |



## CROP YIELDS AT THE WILLISTON (N. DAK.) FIELD STATION—Continued

TABLE 51.—Annual acre yields of specified crops grown in rotations on individual plots at Williston, N. Dak., in one or more years from 1909 to 1920—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1909  | 1910  | 1911  | 1912 | 1913 | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>SPRING WHEAT—CON.</b>      |               |                |       |       |       |      |      |       |       |       |       |       |       |       |        |         |
| 8.....                        | Oats          | Fall plowed    | 26.2  | 1.2   | 1.3   | 32.2 | 9.5  | 28.7  | 22.0  | 30.7  | 6.0   | 2.7   | 7.7   | 7.3   | 149.3  | 13.6    |
| 9.....                        | do            | Spring plowed  | 32.0  | 1.8   | 4.0   | 32.2 | 13.0 | 31.5  | 25.8  | 27.7  | 9.2   | 4.2   | 7.3   | 11.7  | 168.4  | 15.3    |
| 10.....                       | Corn          | Disked         | 32.3  | 1.8   | 5.7   | 43.3 | 14.1 | 17.7  | 21.8  | 25.2  | 8.8   | 4.3   | 2.2   | 6.8   | 151.7  | 13.8    |
| 11.....                       | do            | do             | 31.3  | 1.0   | 3.2   | 35.8 | 18.7 | (1)   |       |       |       |       |       |       |        |         |
| 12.....                       | do            | do             | 24.3  | .7    | 6.2   | 39.7 | 19.8 | 15.3  | 21.7  | 28.8  | 9.0   | 4.8   | 4.2   | 12.0  | 162.2  | 14.7    |
| 14.....                       | do            | do             | 28.7  | .7    | 7.6   | 41.7 | 11.8 | 19.6  | 17.3  | 30.8  | 9.5   | 5.3   | 2.0   | 10.8  | 157.1  | 14.3    |
| 15.....                       | Winter rye    | Green manured  | 30.3  | 2.8   | .8    | 36.0 | 18.8 | 37.3  | 37.2  | 26.5  | 12.2  | 3.9   | 2.3   | 8.7   | 186.5  | 17.0    |
| 16.....                       | Corn          | Disked         | 27.8  | .7    | 6.6   | 43.0 | 13.3 | 21.0  | 19.0  | 33.3  | 11.8  | 3.8   | 3.2   | 8.8   | 164.5  | 15.0    |
| 17.....                       | Peas          | Green manured  | 30.2  | 2.0   | 2.5   | 33.0 | 19.7 | 32.7  | 34.3  | 29.7  | 10.2  | 4.0   | 3.3   | 9.8   | 181.2  | 16.5    |
| 18.....                       | Fallow        | Fallowed       | 26.2  | 6.8   | 10.8  | 41.7 | 20.1 | 32.7  | 42.3  | 28.8  | 15.2  | 3.8   | 2.5   | 5.7   | 210.4  | 19.1    |
| 19.....                       | Corn          | Disked         | 26.0  | .5    | 5.8   | 39.7 | 14.8 | 24.3  | 23.2  | 39.7  | 12.2  | 4.2   | 3.3   | 7.7   | 175.4  | 15.9    |
| 31 <sup>1</sup>               | do            | do             | 31.3  | 1.0   | 3.2   | 35.8 | 18.7 | 17.0  | 25.3  | 27.0  | 7.7   | 4.5   | 3.3   | 7.7   | 151.2  | 13.7    |
| Average                       |               |                |       | 1.7   | 4.7   | 37.7 | 15.3 | 25.6  | 24.7  | 28.8  | 10.8  | 4.1   | 4.0   | 10.8  | 168.2  | 15.3    |
| <b>OATS</b>                   |               |                |       |       |       |      |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Oats          | Spring plowed  | 53.4  | 3.1   | 9.1   | 47.8 | 34.7 | 51.6  | 28.9  | 54.4  | 8.8   | 5.5   | 2.2   | 8.8   | 254.9  | 23.2    |
| B.....                        | do            | Fall plowed    | 47.8  | 2.2   | 8.1   | 46.9 | 30.3 | 60.6  | 35.5  | 54.1  | 8.4   | 9.4   | 3.1   | 5.9   | 264.5  | 24.0    |
| Average                       |               |                |       | 2.7   | 8.6   | 47.4 | 32.5 | 56.1  | 32.2  | 54.3  | 8.6   | 7.5   | 2.7   | 7.4   | 259.7  | 23.6    |
| C or D.....                   | Fallow        | Fallowed       | 64.7  | 7.7   | 15.6  | 82.2 | 41.3 | 83.4  | 52.8  | 75.6  | 22.5  | 16.3  | 13.8  | 35.6  | 446.8  | 40.6    |
| 1.....                        | Wheat         | Fall plowed    | 67.5  | 1.6   | 8.8   | 63.4 | 40.6 | 68.4  | 40.3  | 68.4  | 7.5   | 9.7   | 12.2  | 17.8  | 338.7  | 30.1    |
| 2.....                        | do            | Spring plowed  | 77.2  | 1.9   | 22.5  | 60.0 | 36.3 | 70.3  | 49.1  | 69.1  | 15.0  | 7.8   | 3.6   | 16.9  | 353.2  | 32.0    |
| 3.....                        | do            | Fall plowed    | 67.5  | 1.3   | 9.4   | 55.3 | 33.8 | 79.4  | 40.9  | 61.3  | 8.4   | 6.3   | 3.9   | 29.4  | 329.4  | 29.9    |
| 4.....                        | Corn          | Disked         | 75.0  | 3.8   | 15.9  | 63.1 | 58.0 | 76.3  | 45.6  | 94.7  | 36.9  | 3.8   | 26.9  | 47.5  | 472.5  | 43.0    |
| 5.....                        | Wheat         | Fall plowed    | 55.3  | 1.3   | 7.5   | 54.1 | 33.4 | 74.7  | 41.6  | 69.1  | 7.5   | 9.1   | 3.1   | 11.3  | 312.7  | 28.4    |
| 6.....                        | Barley        | do             | 81.9  | 2.2   | 8.8   | 61.3 | 28.9 | 87.5  | 60.2  | 81.3  | 8.4   | 2.8   | 6.9   | 26.3  | 374.6  | 34.1    |
| 7.....                        | Corn          | Spring plowed  | 61.3  | .9    | 7.2   | 68.4 | 40.3 | 56.3  | 45.6  | 65.3  | 15.0  | 6.3   | 5.9   | 24.1  | 335.3  | 30.5    |
| 8.....                        | Fallow        | Fallowed       | 65.3  | 5.0   | 18.1  | 88.8 | 52.5 | 83.4  | 75.3  | 72.8  | 31.3  | 7.5   | 13.4  | 45.0  | 493.1  | 44.8    |
| 9.....                        | Corn          | Spring plowed  | 68.8  | 2.5   | 12.8  | 70.9 | 53.1 | 73.8  | 53.3  | 80.3  | 22.2  | 3.8   | 17.8  | 48.8  | 439.3  | 39.9    |
| 10.....                       | Bromegrass    | Fall plowed    | 69.4  | 7.8   | 1.6   | 63.1 | 27.5 | 71.6  | 46.6  | 78.4  | 7.2   | 2.5   | 2.5   | 13.8  | 322.6  | 29.3    |
| 11.....                       | Clover        | do             | 65.3  | 9.1   | 5.9   | 66.6 | 40.2 | (2)   |       |       |       |       |       |       |        |         |
| 12.....                       | Flax          | do             | 62.5  | 5.0   | 2.8   | 61.9 | 12.2 | 52.8  | 24.8  | 64.4  | 7.5   | 2.7   | 2.2   | 6.6   | 242.9  | 22.1    |
| 14.....                       | Rye           | Green manured  | 59.1  | 4.1   | 7.5   | 61.9 | 48.0 | 63.8  | 68.6  | 67.5  | 25.0  | 6.3   | 5.3   | 11.9  | 369.9  | 33.6    |
| 15.....                       | Corn          | Disked         | 76.3  | 1.9   | 15.9  | 68.1 | 45.6 | 60.6  | 41.9  | 79.7  | 9.1   | 5.9   | 2.8   | 20.0  | 351.5  | 32.0    |
| 16.....                       | Peas          | Green manured  | 66.6  | 3.8   | 9.1   | 57.5 | 45.3 | 89.4  | 63.3  | 70.6  | 16.9  | 4.7   | 4.7   | 23.1  | 388.4  | 35.3    |
| 17.....                       | Corn          | Disked         | 65.3  | 2.2   | 18.8  | 65.9 | 40.3 | 59.6  | 42.8  | 78.8  | 24.4  | 7.2   | 3.0   | 25.6  | 368.6  | 33.3    |
| 18.....                       | do            | do             | 58.4  | 1.9   | 9.4   | 59.4 | 25.9 | 45.0  | 26.3  | 68.8  | 24.1  | 4.1   | 3.4   | 10.0  | 278.3  | 25.5    |
| 19.....                       | Fallow        | Fallowed       | 63.1  | 5.0   | 16.6  | 60.3 | 25.6 | 72.2  | 61.9  | 63.4  | 34.4  | 10.6  | 7.8   | 22.2  | 380.0  | 34.5    |
| 31 <sup>1</sup>               | Sweetclover   | Green manured  | 65.3  | 9.1   | 5.9   | 66.6 | 40.2 | 85.3  | 23.4  | 69.4  | 18.8  | 2.8   | 1.9   | 13.8  | 337.2  | 30.7    |
| Average                       |               |                |       | 3.4   | 11.0  | 63.9 | 38.2 | 70.6  | 47.3  | 72.4  | 17.8  | 5.8   | 7.1   | 23.0  | 360.4  | 32.7    |
| <b>CORN TOTAL<sup>3</sup></b> |               |                |       |       |       |      |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Corn          | Spring plowed  | 5,140 | 1,560 | 3,560 | (3)  | (3)  | 6,890 | 3,010 | 8,780 | 4,050 | 6,530 | 3,190 | 2,050 | 39,620 | 4,402   |
| B.....                        | do            | Fall plowed    | 5,370 | 1,440 | 3,040 |      |      | 7,090 | 3,020 | 8,230 | 5,000 | 6,960 | 3,090 | 2,260 | 40,130 | 4,459   |
| Average                       |               |                |       | 1,500 | 3,300 |      |      | 6,990 | 3,015 | 8,505 | 4,525 | 6,745 | 3,140 | 2,155 | 39,875 | 4,430   |
| C or D.....                   | Fallow        | Fallowed       | 6,220 | 4,540 | 4,660 |      |      | 6,720 | 2,960 | 9,190 | 7,550 | 7,720 | 3,470 | 3,780 | 50,590 | 6,205   |
| 1.....                        | Oats          | Fall plowed    | 7,520 | 1,160 | 3,830 |      |      | 8,010 | 2,180 | 6,210 | 2,740 | 5,700 | 2,580 | 1,350 | 33,760 | 3,751   |
| 2.....                        | do            | Spring plowed  | 7,390 | 2,060 | 4,240 |      |      | 8,240 | 2,590 | 8,670 | 2,800 | 5,100 | 2,750 | 1,920 | 38,370 | 4,267   |
| 3.....                        | do            | Fall plowed    | 7,500 | 1,080 | 2,325 |      |      | 3,940 | 3,400 | 7,250 | 2,220 | 5,250 | 2,370 | 1,680 | 29,515 | 3,279   |
| 4.....                        | Wheat         | do             | 8,180 | 2,940 | 3,680 |      |      | 7,930 | 2,030 | 7,610 | 1,510 | 6,220 | 5,740 | 2,610 | 40,330 | 4,481   |
| 6.....                        | Oats          | do             | 8,260 | 1,900 | 3,780 |      |      | 9,450 | 1,780 | 7,140 | 1,420 | 4,800 | 4,380 | 2,130 | 36,780 | 3,420   |
| 7.....                        | Barley        | Spring plowed  | 6,360 | 1,500 | 4,090 |      |      | 7,240 | 2,620 | 7,650 | 3,030 | 5,850 | 2,390 | 1,610 | 35,980 | 3,998   |
| 9.....                        | Wheat         | do             | 5,840 | 2,540 | 4,290 |      |      | 9,180 | 2,060 | 6,840 | 2,470 | 5,540 | 3,800 | 1,390 | 38,110 | 4,234   |
| 10.....                       | Oats          | do             | 5,720 | 1,460 | 3,180 |      |      | 6,690 | 2,430 | 6,000 | 2,260 | 5,150 | 1,180 | 1,400 | 29,750 | 3,306   |
| 11.....                       | do            | do             | 5,480 | 1,820 | 3,360 |      |      | (1)   |       |       |       |       |       |       |        |         |
| 12.....                       | do            | do             | 5,460 | 1,580 | 4,220 |      |      | 6,730 | 2,220 | 5,100 | 2,100 | 6,450 | 2,200 | 1,510 | 32,110 | 3,568   |
| 14.....                       | do            | do             | 7,250 | 1,300 | 4,780 |      |      | 7,620 | 1,970 | 5,870 | 2,420 | 5,620 | 2,220 | 2,150 | 33,950 | 3,772   |
| 15.....                       | Wheat         | do             | 7,190 | 1,580 | 5,100 |      |      | 8,030 | 2,630 | 7,160 | 2,110 | 5,390 | 2,310 | 1,950 | 36,260 | 4,029   |
| 16.....                       | Oats          | do             | 6,640 | 1,400 | 4,860 |      |      | 7,370 | 2,050 | 9,710 | 2,540 | 5,110 | 2,600 | 1,780 | 37,420 | 4,158   |
| 17.....                       | Wheat         | do             | 7,230 | 1,820 | 4,760 |      |      | 8,110 | 2,520 | 6,410 | 2,660 | 6,250 | 2,610 | 1,520 | 36,660 | 4,073   |
| 18.....                       | do            | do             | 7,830 | 1,020 | 3,280 |      |      | 8,120 | 1,830 | 8,330 | 3,040 | 7,050 | 2,320 | 1,750 | 36,740 | 4,082   |
| 19.....                       | Oats          | do             | 7,220 | 1,320 | 4,220 |      |      | 8,420 | 2,440 | 7,450 | 3,600 | 5,280 | 2,110 | 2,150 | 36,990 | 4,110   |
| 31 <sup>1</sup>               | do            | do             | 5,480 | 1,820 | 3,380 |      |      | 7,100 | 2,220 | 5,160 | 2,480 | 6,090 | 2,420 | 1,280 | 31,950 | 3,550   |
| Average                       |               |                |       | 1,665 | 4,001 |      |      | 7,636 | 2,311 | 7,039 | 2,463 | 5,678 | 2,749 | 1,761 | 35,292 | 3,880   |
| <b>CORN GRAIN</b>             |               |                |       |       |       |      |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Corn          | Spring plowed  | 18.0  | 0     | 0     | 0    | 31.4 | 44.0  | 0     | 54.0  | 11.3  | 19.7  | 8.5   | 4.9   | 173.8  | 15.8    |
| B.....                        | do            | Fall plowed    | 16.1  | 0     | 0     | 0    | 38.3 | 38.4  | 0     | 47.4  | 10.6  | 22.8  | 8.5   | 5.5   | 171.5  | 15.6    |
| Average                       |               |                |       | 0     | 0     | 0    | 34.9 | 41.2  | 0     | 50.7  | 11.0  | 21.3  | 8.5   | 5.2   | 172.7  | 15.7    |
| C or D.....                   | Fallow        | Fallowed       | 16.9  | 0     | 0     | 0    | 45.3 | 42.9  | 0     | 54.4  | 14.4  | 25.6  | 14.9  | 10.9  | 208.4  | 18.9    |
| 1.....                        | Oats          | Fall plowed    | 15.4  | 0     | 0     | 0    | 17.6 | 46.7  | 0     | 39.0  | 4.9   | 20.0  | 7.7   | 4.0   | 139.9  | 12.7    |
| 2.....                        | do            | Spring plowed  | 10.3  | 0     | 0     | 0    | 20.9 | 51.1  | 0     | 49.6  | 4.4   | 17.3  | 7.3   | 0     | 150.6  | 13.7    |
| 3.....                        | do            | Fall plowed    | 19.1  | 0     | 0     | 0    | 12.6 | 45.4  | 0     | 46.6  | 2.4   | 16.7  | 5.6   | 0     | 129.3  | 11.8    |
| 4.....                        | Wheat         | do             | 23.6  | 0     | 0     | 0    | 18.2 | 48.3  | 0     | 45.8  | 1.6   | 18.7  | 28.5  | 7.9   | 169.0  | 15.4    |
| 6.....                        | Oats          | do             | 17.4  | 0     | 0     | 0    | 10.3 | 55.9  | 0     | 44.1  | 2.1   | 15.3  | 15.7  | 6.4   | 149.8  | 13.6    |
| 7.....                        | Barley        | Spring plowed  | 14.8  | 0     | 0     | 0    | 27.3 | 42.7  | 0     | 46.9  | 8.5   | 18.0  | 8.5   | 0     | 151.9  | 13.8    |
| 9.....                        | Wheat         | do             | 26.4  | 0     | 0     | 0    | 26.4 | 50.0  | 0     | 39.0  | 4.0   | 18.9  | 18.0  | 0     | 156.3  | 14.2    |
| 10.....                       | Oats          | do             | 19.7  | 0     | 0     | 0    | 13.1 | 44.1  | 0     | 43.8  | 2.6   | 16.0  | 2.4   | 0     | 122.0  | 11.1    |
| 11.....                       | do            | do             | 25.3  | 0     | 0     | 0    | 24.7 | (1)   |       |       |       |       |       |       |        |         |
| 12.....                       | do            | do             | 29.9  | 0     | 0     | 0    | 23.0 | 38.1  | 0     | 34.4  | 1.5   | 19.3  | 7.7   | 0     | 124.0  | 11.3    |
| 14.....                       | do            | do             | 19.9  | 0     | 0     | 0    | 26.0 | 42.3  | 0     | 36.3  | 3.0   | 16.3  | 6.3   | 0     | 130.2  | 11.8    |
| 15.....                       | Wheat         | do             | 13.7  | 0     | 0     | 0    | 28.6 | 45.7  | 0     | 42.4  | 1.4   | 17.2  | 8.8   | 0     | 144.1  | 13.1    |
| 16.....                       | Oats          | do             | 8.0   | 0     | 0     | 0    | 27.4 | 41.3  | 0     | 50.8  | 3.0   | 16.8  | 6.0   | 0     | 145.3  | 13.2    |

<sup>1</sup> Rotation 31 started in 1914 on plots B, C, D, and E of rotation 11. Yields for rotation 11 are used for rotation 31 from 1909 to 1913.<sup>2</sup> Destroyed by hogs; yield mathematically interpolated from rotation 17.<sup>3</sup> Corn total yields at Williston in 1912 and 1913, although heavy, are not

## CROP YIELDS AT THE WILLISTON (N. DAK.) FIELD STATION—Continued

TABLE 51.—Annual acre yields of specified crops grown in rotations on individual plots at Williston, N. Dak., in one or more years from 1909 to 1920—Continued

| Crop and rotation No. or plot | Previous crop   | Tillage method     | 1909 | 1910 | 1911 | 1912  | 1913  | 1914 | 1915 | 1916  | 1917 | 1918  | 1919             | 1920 | Total | Average |
|-------------------------------|-----------------|--------------------|------|------|------|-------|-------|------|------|-------|------|-------|------------------|------|-------|---------|
| <b>CORN GRAIN—CON.</b>        |                 |                    |      |      |      |       |       |      |      |       |      |       |                  |      |       |         |
| 17.....                       | Wheat.....      | Spring plowed..... | 12.3 | 0    | 0    | 0     | 29.9  | 48.3 | 0    | 38.0  | 6.4  | 15.3  | 10.8             | 0    | 148.7 | 13.5    |
| 18.....                       | do.....         | do.....            | 24.6 | 0    | 0    | 0     | 32.4  | 43.1 | 0    | 47.5  | 4.9  | 23.3  | 5.6              | 0    | 156.8 | 14.3    |
| 19.....                       | Oats.....       | do.....            | 20.3 | 0    | 0    | 0     | 28.1  | 43.1 | 0    | 42.4  | 5.6  | 18.4  | 4.8              | 0    | 142.4 | 12.9    |
| 31 <sup>1</sup> .....         | do.....         | do.....            | 25.3 | 0    | 0    | 0     | 24.7  | 44.6 | 0    | 35.8  | 4.8  | 17.2  | 8.7              | 0    | 135.8 | 12.3    |
| Average.....                  |                 |                    |      | 0    | 0    | 0     | 22.9  | 45.7 | 0    | 42.7  | 3.8  | 17.8  | 9.5              | 1.1  | 143.5 | 13.0    |
| <b>BARLEY</b>                 |                 |                    |      |      |      |       |       |      |      |       |      |       |                  |      |       |         |
| A.....                        | Barley.....     | Spring plowed..... | 30.2 | .8   | 5.8  | 31.7  | 14.4  | 21.4 | 17.7 | 33.1  | 10.4 | 2.5   | 1.3              | 3.8  | 142.9 | 13.0    |
| B.....                        | do.....         | Fall plowed.....   | 31.9 | .6   | 3.3  | 46.0  | 14.8  | 22.0 | 14.2 | 34.0  | 4.6  | 1.3   | .8               | 2.5  | 144.1 | 13.1    |
| Average.....                  |                 |                    |      | .7   | 4.6  | 38.9  | 14.6  | 21.7 | 16.0 | 33.6  | 7.5  | 1.9   | 1.1              | 3.2  | 143.5 | 13.0    |
| C or D.....                   | Fallow.....     | Fallow.....        | 50.0 | 5.2  | 12.7 | 54.4  | 21.9  | 49.8 | 54.8 | 60.0  | 17.9 | 7.3   | 8.1              | 23.5 | 315.6 | 28.7    |
| 6.....                        | Corn.....       | Disked.....        | 61.5 | .4   | 4.2  | 50.8  | 28.5  | 53.4 | 30.2 | 40.6  | 13.3 | 3.6   | 6.3              | 30.8 | 262.1 | 23.8    |
| 7.....                        | Oats.....       | Spring plowed..... | 43.8 | .2   | 4.6  | 30.0  | 15.6  | 36.7 | 22.9 | 34.6  | 5.0  | 2.6   | 3.8              | 11.9 | 167.9 | 15.3    |
| Average.....                  |                 |                    |      | .3   | 4.4  | 40.4  | 22.1  | 45.1 | 26.6 | 37.6  | 9.2  | 3.1   | 5.1              | 21.4 | 215.0 | 19.6    |
| <b>FLAX</b>                   |                 |                    |      |      |      |       |       |      |      |       |      |       |                  |      |       |         |
| 12.....                       | Bromegrass..... | Spring plowed..... | 12.2 | 0    | .9   | 11.4  | 0     | 8.9  | 7.0  | 11.8  | 0    | 2.1   | 3.4              | 3.2  | 48.7  | 4.4     |
| <b>BROMEGRASS</b>             |                 |                    |      |      |      |       |       |      |      |       |      |       |                  |      |       |         |
| 10.....                       | (Wheat.....     | Disked.....        | 0    | 0    | 0    | 1,440 | 640   | 0    | 690  | 2,200 | 550  | 550   | ( <sup>4</sup> ) | 520  | 6,590 | 599     |
|                               | Bromegrass..... |                    | 0    | 0    | 980  | 1,980 | 400   | 520  | 420  | 1,310 | 420  | 640   | ( <sup>4</sup> ) | 600  | 7,270 | 661     |
| 12.....                       | (Wheat.....     | Disked.....        | 0    | 0    | 0    | 1,070 | 1,020 | 0    | 610  | 1,690 | 450  | 920   | 0                | 410  | 6,170 | 561     |
|                               | Bromegrass..... |                    | 0    | 0    | 280  | 1,700 | 180   | 620  | 570  | 1,400 | 400  | 1,160 | 0                | 720  | 7,030 | 639     |
| Average.....                  |                 |                    |      | 0    | 315  | 1,548 | 560   | 285  | 573  | 1,650 | 455  | 818   | 0                | 563  | 6,765 | 615     |
| <b>CLOVER</b>                 |                 |                    |      |      |      |       |       |      |      |       |      |       |                  |      |       |         |
| 11.....                       | (Wheat.....     | Fall plowed.....   | 0    | 0    | 0    | 0     | 0     |      |      |       |      |       |                  |      | 0     | 0       |
|                               | (Clover.....    |                    | 0    | 0    | 0    | 0     | 0     |      |      |       |      |       |                  |      | 0     | 0       |
| Average.....                  |                 |                    |      | 0    | 0    | 0     | 0     |      |      |       |      |       |                  |      | 0     | 0       |

<sup>1</sup> Rotation 31 started in 1914 on plots B, C, D, and E of rotation 11. Yields for rotation 11 are used for rotation 31 from 1909 to 1914.<sup>4</sup> No record. Yield is considered zero in computing averages.

## CROP YIELDS AT THE ASSINNIBOINE (MONT.) FIELD STATION

TABLE 52.—Annual acre yields of specified crops grown in rotations on individual plots at Assinniboine, Mont., in one or more years from 1916 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used, except that in the continuous-cropping (unnumbered) series with winter wheat, oats, barley, and winter rye the small letter a, b, or c suffixed to the capital letter designating the plot indicates replications with variations of the tillage methods outlined on page 41. The letter a indicates plowing 4 inches deep, b indicates plowing 8 inches deep, and c indicates plowing 8 inches deep and subsoiling to a total depth of 18 inches. For climatic conditions 1916 to 1924, see Figure 4 (p. 8), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, and alfalfa are given in pounds; all other yields are stated in bushels. Beginning with 1924, winter wheat was changed to spring wheat in rotations 114, 115, 116, 117, 118, 119, 131, 132, 171, and 172. Following the system of numbering in use, these rotations then became Nos. 14, 15, etc., the hundred being dropped. In the present tabulation, the record of winter wheat in the rotations enumerated ends with 1923, the records of oats and corn are continued under the old numbers, and the record of spring wheat is begun with 1924 under the new numbers. The change from winter wheat to spring wheat involved no changes in the immediate preparation for oats. In the immediate preparation for corn beginning with 1925 that crop was grown after spring wheat instead of after winter wheat in rotations 115, 117, 118, 132, and 172.]

| Crop and rotation No. or plot | Previous crop     | Tillage method   | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|-------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>           |                   |                  |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Winter wheat..... | Fall plowed..... | 43.3 | 12.3 | 5.8  | 0.7  | 6.7  | 0    | 0.8  | 0    | 0    | 11.8 | 9.3  | 25.6  | 2.8     |
| B.....                        | do.....           | do.....          | 41.0 | 12.3 | 5.8  | 1.5  | 6.0  | 0    | 4.0  | 0    | 0    | 14.8 | 10.2 | 29.8  | 3.3     |
| E.....                        | do.....           | do.....          | 33.0 | 2.2  | 4.2  | 1.3  | 2.3  | 0    | 4.0  | 0    | 0    | 7.8  | 9.2  | 23.2  | 2.6     |
| F.....                        | do.....           | Fall listed..... | 30.3 | 2.8  | 3.0  | .8   | 2.2  | 0    | 0    | 0    | 0    | 6.8  | 8.7  | 17.5  | 1.9     |
| Ba.....                       | do.....           | Fall plowed..... |      | 3.7  | 3.0  | 0    | 3.5  | 0    | 2.8  | 0    | 0    | 8.8  | 9.3  | 23.3  | 2.5     |
| Bb.....                       | do.....           | do.....          |      | 3.2  | 4.5  | 0    | 3.5  | 0    | 4.3  | 0    | 0    | 10.0 | 10.8 | 26.3  | 2.9     |
| Bc.....                       | do.....           | Subsoiled.....   |      | 3.3  | 5.8  | .3   | 3.3  | 0    | 5.0  | 0    | 0    | 8.7  | 11.0 | 27.7  | 3.2     |
| Average.....                  |                   |                  |      | 2.8  | 4.6  | .7   | 3.9  | 0    | 3.0  | 0    | 0    |      | 9.8  | 24.8  | 2.7     |
| C or D.....                   | Fallow.....       | Fallow.....      | 25.5 | 10.0 | 8.2  | 3.5  | 9.3  | 19.0 | 14.5 | 0    | 17.7 | 12.5 | 21.8 | 116.5 | 11.7    |
| H or I.....                   | do.....           | do.....          | 43.2 | 9.2  | 6.0  | 10.3 | 3.8  | 13.2 | 3.5  | 0    | 0    | 16.8 | 25.5 | 88.3  | 8.8     |
| J or K.....                   | do.....           | do.....          | 48.7 | 12.5 | 5.5  | 15.3 | 8.0  | 15.7 | 9.5  | 0    | 0    | 15.7 | 28.0 | 110.2 | 11.0    |
| L or M.....                   | do.....           | do.....          | 42.2 | 11.8 | 7.2  | 10.7 | 6.8  | 16.8 | 13.0 | 0    | 14.8 | 14.0 | 27.0 | 122.1 | 12.2    |
| Ca or Da.....                 | do.....           | do.....          |      | 3.8  | 7.7  | 1.0  | 4.3  | 12.3 | 9.7  | 0    | 8.5  | 11.5 | 21.0 | 80.1  | 8.0     |
| Ch or Db.....                 | do.....           | do.....          |      | 3.7  | 10.8 | .7   | 6.7  | 14.8 | 12.0 | 0    | 7.7  | 15.7 | 24.7 | 96.8  | 9.7     |
| Cc or Dc.....                 | do.....           | Subsoiled.....   |      | 3.5  | 10.5 | .7   | 8.0  | 11.8 | 13.8 | 0    | 8.3  | 13.3 | 21.3 | 91.2  | 9.1     |
| Average.....                  |                   |                  |      | 7.8  | 8.0  | 6.0  | 6.7  | 14.8 | 10.9 | 0    | 8.1  | 14.2 | 24.2 | 100.7 | 10.1    |
| N or O.....                   | Fallow.....       | Fallow.....      | 43.7 | 10.5 | 4.5  | 0    | 2.7  | 4.5  | 4.2  | 0    | 9.3  | 8.7  | 15.8 | 60.2  | 6.0     |
| 38.....                       | do.....           | do.....          |      | 8.2  | 7.2  | .3   | 4.0  | 11.0 | 0    | 0    | 6.3  | 8.8  | 21.0 | 66.8  | 7.4     |
| 85.....                       | do.....           | do.....          | 30.8 |      | 8.5  | .9   | 5.8  | 8.8  | 4.0  | 0    | 15.3 | 13.8 | 19.8 | 76.9  | 8.5     |
| 149.....                      | Corn.....         | Disked.....      | 40.3 | 5.8  | 6.7  | 4.2  | 3.3  | 9.2  | 3.0  | 0    | 5.2  | 4.0  | 15.2 | 54.6  | 5.7     |
| 571.....                      | Winter wheat..... | do.....          | 48.5 | 5.8  | 3.2  | .6   | 3.3  | 0    | 0    | 0    | 0    | 4.2  | 9.0  | 26.1  | 2.9     |
| 572.....                      | do.....           | Fall plowed..... | 52.8 | 1.2  | 7.2  | .9   | 3.5  | 0    | 3.2  | 0    | 0    | 15.5 | 6.7  | 22.7  | 2.5     |
|                               | do.....           | Disked.....      | 46.0 | 4.3  | 6.5  | .9   | 4.0  | 0    | 3.2  | 0    | 0    | 3.5  | 12.0 | 34.4  | 3.4     |
|                               | do.....           | Fall plowed..... | 45.3 | 1.0  | 5.7  | .5   | 1.8  | 0    | 0    | 0    | 0    | 10.0 | 8.5  | 17.5  | 1.9     |
| 573.....                      | do.....           | Disked.....      | 48.8 | 6.5  | 5.7  | 1.2  | 2.5  | 0    | 0    | 0    | 0    | 2.2  | 10.3 | 28.4  | 3.2     |
|                               | do.....           | do.....          | 47.8 | 4.5  | 3.3  | .6   | 1.7  | 0    | 0    | 0    | 0    | 2.5  | 9.2  | 21.8  | 2.4     |

<sup>1</sup> Interpolated yield.<sup>2</sup> Winterkilled in 1920 and reseeded to spring wheat. Zero yields in 1921 were caused by pale western cutworms. Reseeded to Marquis, one-half bushel to the acre, in 1922.<sup>3</sup> Failure due to injury by grasshoppers; not included in the average.



## CROP YIELDS AT THE ASSINNIBOINE (MONT.) FIELD STATION—Continued

TABLE 52.—Annual acre yields of specified crops grown in rotations on individual plots at Assiniboine, Mont., in one or more years from 1916 to 1926—Continued

| Crop and rotation<br>No. or plot | Previous crop | Tillage method         | 1916  | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|----------------------------------|---------------|------------------------|-------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| WINTER WHEAT—continued           |               |                        |       |      |      |      |      |      |      |      |      |      |      |       |         |
| 568                              | Fallow        | Fallowed               |       |      | 5.0  | 8.3  | 6.7  | 10.8 | 9.3  | 0    | 14.7 | 15.0 | 22.2 | 92.0  | 10.2    |
|                                  | Winter wheat  | Disked                 |       |      | 4.0  | 0    | 0    | .5   | 5.3  | 0    | 0    | 2.5  | 7.2  | 19.5  | 2.2     |
| 53                               | Corn          | do                     | 26.2  | 0    | 7.7  | 8.8  | 4.2  | 6.8  | 5.3  | 0    |      |      |      | 32.8  | 4.7     |
| 54                               | do            | do                     | 30.8  | 0    | 7.0  | 9.2  | 4.3  | 9.3  | 6.2  | 0    |      |      |      | 36.0  | 5.1     |
| 114 or 14                        | do            | do                     | 34.2  | 0    | 5.3  | 9.5  | 3.5  | 8.0  | 7.5  | 0    |      |      |      | 33.8  | 4.8     |
| 115 or 15                        | Winter rye    | Green manured          | 31.7  | 0    | 4.3  | .8   | 2.5  | 5.2  | 2.3  | 0    |      |      |      | 15.1  | 2.2     |
| 116 or 16                        | Corn          | Disked                 | 27.3  | 0    | 5.7  | 9.2  | 4.3  | 11.5 | 4.7  | 0    |      |      |      | 35.4  | 5.1     |
| 117 or 17                        | Peas          | Green manured          | 26.0  | 0    | 7.7  | 2.3  | 5.5  | 7.5  | 8.2  | 0    |      |      |      | 31.2  | 4.5     |
| 118 or 18                        | Fallow        | Fallowed               | 38.8  | 11.8 | 11.3 | 1.8  | 6.0  | 14.8 | 10.7 | 0    |      |      |      | 56.4  | 8.1     |
| 119 or 19                        | Corn          | Disked                 | 46.3  | 0    | 2.8  | 8.3  | 6.7  | 10.7 | 8.3  | 0    |      |      |      | 36.8  | 5.3     |
| 131 or 31                        | do            | do                     | 32.7  | 0    | 3.3  | 8.2  | 5.5  | 9.3  | 5.0  | 0    |      |      |      | 31.3  | 4.5     |
| 132 or 32                        | Sweet clover  | Green manured          | 33.2  | 0    | 5.7  | 2.5  | 5.0  | 10.0 | 4.2  | 0    |      |      |      | 27.4  | 3.9     |
| 171 or 71                        | Corn          | Disked                 | 31.7  | 0    | 5.3  | 11.2 | 6.7  | 8.3  | 3.5  | 0    |      |      |      | 35.0  | 5.0     |
| 172 or 72                        | Fallow        | Fallowed               | 50.0  | 12.5 | 8.3  | 2.8  | 5.2  | 19.3 | 9.8  | 0    |      |      |      | 57.9  | 8.3     |
| Average                          |               |                        |       | 3.4  | 5.9  | 3.9  | 4.1  | 6.9  | 5.4  | 0    | 4.2  | 6.5  | 13.1 | 39.7  | 4.9     |
| SPRING WHEAT                     |               |                        |       |      |      |      |      |      |      |      |      |      |      |       |         |
| A                                | Wheat         | Spring plowed          | 45.8  | 3.5  | 5.7  | 1.5  | 7.2  | 9.7  | 7.2  | 16.7 | 11.8 | 16.3 | 4.3  | 83.9  | 8.4     |
| B                                | do            | Fall plowed            | 47.5  | 3.8  | 4.7  | 1.0  | 7.5  | 6.7  | 0    | 16.2 | 7.3  | 18.7 | 1.7  | 67.6  | 6.8     |
| E                                | do            | Subsoiled              | 49.2  | 2.2  | 3.8  | .5   | 4.8  | 5.7  | 0    | 10.7 | 6.7  | 13.7 | 1.5  | 49.6  | 5.0     |
| F                                | do            | Fall listed            | 50.0  | 7.0  | 5.3  | 2.0  | 6.2  | 8.8  | 4.2  | 7.7  | 8.8  | 11.5 | 3.3  | 64.8  | 6.5     |
| Average                          |               |                        |       | 4.1  | 4.9  | 1.3  | 6.4  | 7.7  | 2.9  | 12.8 | 8.7  | 15.0 | 2.7  | 66.5  | 6.7     |
| C or D                           |               |                        |       |      |      |      |      |      |      |      |      |      |      |       |         |
|                                  | Fallow        | Fallowed               | 49.3  | 11.7 | 5.8  | 2.2  | 10.5 | 19.0 | 12.2 | 20.0 | 19.0 | 18.5 | 13.5 | 132.4 | 13.2    |
| 1a                               | Corn          | Disked                 | 51.3  | 8.7  | 6.5  | 5.8  | 9.0  | 11.0 | 2.5  | 19.2 | 13.2 | 20.0 | 11.5 | 107.4 | 10.7    |
| 1b                               | do            | do                     | 48.6  | 6.8  | 8.2  | 4.2  | 8.8  | 8.7  | 0    | 13.3 | 9.8  | 22.8 | 8.2  | 90.8  | 9.1     |
| 2a                               | do            | Spring plowed          | 50.0  | 5.8  | 7.7  | 5.8  | 13.5 | 10.2 | 4.7  | 22.5 | 13.5 | 23.5 | 9.2  | 116.4 | 11.6    |
| 2b                               | do            | do                     | 38.3  | 4.5  | 11.5 | 5.2  | 9.8  | 6.8  | 1.5  | 23.7 | 12.5 | 19.2 | 5.2  | 99.9  | 10.0    |
| 3a                               | do            | Fall plowed            | 51.5  | 6.3  | 10.0 | 3.0  | 10.3 | 10.5 | 22.8 | 22.5 | 18.0 | 29.5 | 7.0  | 129.9 | 13.0    |
| 3b                               | do            | do                     | 48.0  | 8.5  | 8.5  | 2.3  | 8.8  | 6.8  | 0    | 7.0  | 18.0 | 17.5 | 2.5  | 69.9  | 7.0     |
| 4a                               | Oats          | do                     | 47.6  | 3.5  | 10.0 | .3   | 14.0 | 7.7  | 0    | 19.2 | 10.2 | 18.7 | 3.2  | 86.8  | 8.7     |
| 4b                               | do            | do                     | 50.2  | 8.7  | 7.3  | 1.0  | 18.2 | 4.5  | 0    | 19.3 | 19.8 | 22.3 | 4.3  | 95.4  | 9.5     |
| 5a                               | Fallow        | Fallowed               | 50.5  | 12.0 | 9.2  | 4.7  | 12.3 | 17.0 | 6.8  | 20.3 | 20.8 | 19.2 | 13.0 | 135.3 | 13.5    |
| 5b                               | do            | do                     | 53.0  | 11.7 | 9.8  | 3.3  | 8.2  | 8.3  | 11.7 | 22.0 | 21.7 | 23.0 | 13.8 | 133.5 | 13.4    |
| 8a                               | Oats          | Fall plowed            | 48.2  | 2.7  | 8.0  | .5   | 12.7 | 7.3  | 0    | 12.0 | 10.5 | 21.2 | 3.0  | 77.9  | 7.8     |
| 8b                               | do            | do                     | 56.0  | 4.0  | 7.0  | .3   | 5.8  | 4.3  | 0    | 14.2 | 8.7  | 19.2 | 1.0  | 64.5  | 6.5     |
| 9a                               | do            | Spring plowed          | 53.0  | 4.7  | 11.8 | 2.0  | 12.5 | 13.2 | 5.8  | 22.0 | 12.5 | 20.0 | 6.3  | 110.8 | 11.1    |
| 9b                               | do            | do                     | 49.7  | 3.2  | 11.8 | .8   | 10.0 | 9.2  | 3.3  | 17.5 | 10.3 | 17.3 | 3.7  | 87.1  | 8.7     |
| 13                               | Corn          | Disked                 | 51.2  | 6.2  | 8.7  | 4.0  | 12.5 | 12.3 | 4.5  | 18.0 | 14.8 | 20.2 | 12.5 | 113.7 | 11.4    |
| 41                               | do            | do                     | 48.2  | 6.8  | 8.5  | 4.5  | 11.7 | 11.0 | 2.5  | 21.7 | 10.8 | 18.0 | 11.2 | 106.7 | 10.7    |
| 42                               | do            | do                     | 48.0  | 6.2  | 8.8  | 4.7  | 12.0 | 12.0 | 2.0  | 12.5 | 13.2 | 19.7 | 9.7  | 100.8 | 10.1    |
| 49                               | do            | do                     | 48.7  | 7.2  | 3.8  | 3.8  | 5.7  | 11.0 | 1.3  | 13.3 | 9.2  | 12.3 | 8.3  | 75.9  | 7.6     |
| 68                               | do            | do                     | 52.0  | 8.7  | 12.3 | 5.5  | 14.0 | 11.2 | 2.3  | 29.3 | 18.8 | 16.8 | 12.2 | 131.1 | 13.1    |
| 69                               | do            | do                     | 53.6  | 7.7  | 10.7 | 6.0  | 13.8 | 10.8 | 3.5  | 20.7 | 12.3 | 18.8 | 11.3 | 115.6 | 11.6    |
| 70                               | do            | do                     | 51.6  | 7.7  | 8.3  | 7.0  | 14.5 | 14.5 | 5.8  | 18.5 | 13.3 | 20.0 | 12.3 | 121.9 | 12.2    |
| 247a                             | Flax          | Spring plowed          | 44.2  | 1.7  | 9.2  | 1.8  | 7.5  | 9.2  | 9.3  | 24.7 | 19.2 | 22.0 | 2.8  | 107.4 | 10.7    |
| 247b                             | do            | do                     |       | 7.3  | 9.5  | 1.2  | 10.3 | 8.8  | 5.7  | 15.3 | 12.8 | 17.5 | 7.3  | 95.7  | 9.6     |
| 570                              | Fallow        | Fallowed               | 42.0  | 8.7  | 8.7  | 6.8  | 20.2 | 17.5 | 18.0 | 29.2 | 20.2 | 21.7 | 16.3 | 167.3 | 16.7    |
| 14                               | Corn          | Disked                 |       |      |      |      |      |      |      |      | 3.8  | 13.8 | 8.8  | 22.6  | 11.3    |
| 15                               | Winter rye    | Green manured          |       |      |      |      |      |      |      |      | 11.7 | 13.8 | 12.7 | 26.5  | 13.3    |
| 16                               | Corn          | Disked                 |       |      |      |      |      |      |      |      | 6.0  | 16.2 | 9.2  | 25.4  | 12.7    |
| 17                               | Peas          | Green manured          |       |      |      |      |      |      |      |      | 7.7  | 11.7 | 7.3  | 19.0  | 9.5     |
| 18                               | Fallow        | Fallowed               |       |      |      |      |      |      |      |      | 16.0 | 17.8 | 16.2 | 34.0  | 17.0    |
| 19                               | Corn          | Disked                 |       |      |      |      |      |      |      |      | 4.5  | 17.8 | 12.2 | 30.0  | 15.0    |
| 31                               | do            | do                     |       |      |      |      |      |      |      |      | 2.8  | 12.8 | 9.5  | 22.3  | 11.2    |
| 32                               | Sweetclover   | Green manured          |       |      |      |      |      |      |      |      | 13.0 | 12.5 | 14.7 | 27.2  | 13.6    |
| 53                               | Corn          | Disked                 |       |      |      |      |      |      |      |      | 5.7  | 14.2 | 9.7  | 23.9  | 12.0    |
| 54                               | do            | do                     |       |      |      |      |      |      |      |      | 4.2  | 16.7 | 9.8  | 26.5  | 13.3    |
| 71                               | do            | do                     |       |      |      |      |      |      |      |      | 4.5  | 17.8 | 10.0 | 27.8  | 13.9    |
| 72                               | Fallow        | Fallowed               |       |      |      |      |      |      |      |      | 11.8 | 14.7 | 11.7 | 26.4  | 13.2    |
| Average                          |               |                        |       | 6.6  | 9.0  | 3.5  | 11.5 | 10.2 | 4.8  | 19.1 | 13.1 | 18.3 | 9.1  | 79.3  | 11.4    |
| OATS                             |               |                        |       |      |      |      |      |      |      |      |      |      |      |       |         |
| A                                | Oats          | Spring plowed          | 92.2  | 7.8  | 14.1 | 1.9  | 24.4 | 23.8 | 16.3 | 30.0 | 33.8 | 28.4 | 4.1  | 184.6 | 18.5    |
| Aa                               | do            | do                     | 79.1  | 4.7  | 9.7  | 1.3  | 24.7 | 25.0 | 14.1 | 27.2 | 30.0 | 29.7 | 6.3  | 172.7 | 17.3    |
| Ab                               | do            | do                     | 82.2  | 7.8  | 11.6 | 1.3  | 29.1 | 32.2 | 18.8 | 29.7 | 37.5 | 27.8 | 8.8  | 204.6 | 20.5    |
| Ac                               | do            | do                     | 76.9  | 12.2 | 8.8  | 2.2  | 27.5 | 32.5 | 17.5 | 27.8 | 34.1 | 30.3 | 8.4  | 201.3 | 20.1    |
| B                                | do            | Fall plowed            | 88.4  | 4.7  | 9.4  | 1.3  | 22.2 | 25.0 | 0    | 33.1 | 23.8 | 40.6 | 0    | 160.1 | 16.0    |
| Ba                               | do            | do                     | 82.5  | 6.9  | 4.7  | .6   | 19.1 | 13.8 | 3.4  | 20.3 | 24.4 | 29.7 | 4.7  | 127.6 | 12.8    |
| Bb                               | do            | do                     | 86.3  | 8.4  | 7.2  | .9   | 18.8 | 14.4 | 4.4  | 23.4 | 31.9 | 33.1 | 4.1  | 146.6 | 14.7    |
| E                                | do            | Fall plowed, subsoiled | 89.1  | 5.9  | 10.3 | 1.9  | 12.2 | 17.2 | 0    | 17.8 | 23.1 | 27.8 | 0    | 116.2 | 11.6    |
| Bc                               | do            | do                     | 87.8  | 8.4  | 6.3  | .6   | 21.3 | 11.6 | 6.3  | 17.2 | 26.6 | 34.1 | 3.4  | 135.8 | 13.6    |
| F                                | do            | Fall listed            | 93.8  | 13.8 | 7.5  | 4.4  | 18.4 | 23.8 | 9.1  | 14.4 | 25.3 | 25.3 | 2.5  | 144.5 | 14.5    |
| Average                          |               |                        |       | 8.1  | 9.0  | 1.6  | 21.8 | 21.9 | 9.0  | 24.1 | 29.1 | 30.7 | 4.2  | 159.4 | 16.0    |
| C or D                           |               |                        |       |      |      |      |      |      |      |      |      |      |      |       |         |
|                                  | Fallow        | Fallowed               | 88.4  | 24.4 | 14.4 | 7.8  | 31.6 | 37.8 | 26.9 | 34.7 | 49.7 | 36.9 | 25.0 | 289.2 | 28.9    |
| Ca or Da                         | do            | do                     | 80.6  | 21.6 | 7.5  | 1.6  | 20.3 | 34.1 | 21.6 | 30.3 | 54.4 | 44.4 | 24.1 | 259.9 | 26.0    |
| Cb or Db                         | do            | do                     | 78.1  | 23.1 | 10.3 | 1.6  | 26.9 | 43.8 | 26.3 | 40.0 | 58.4 | 45.9 | 28.1 | 304.4 | 30.4    |
| Cc or Dc                         | do            | Subsoiled              | 84.4  | 24.1 | 13.4 | 1.7  | 34.1 | 46.6 | 27.8 | 39.7 | 56.3 | 44.4 | 32.8 | 320.9 | 32.1    |
| Average                          |               |                        |       | 23.4 | 11.4 | 3.2  | 28.2 | 40.6 | 25.7 | 36.2 | 54.7 | 42.9 | 27.5 | 236.6 | 29.4    |
| 1a                               | Wheat         | Fall plowed            | 105.0 | 6.6  | 12.2 | 1.6  | 18.8 | 15.6 | 0    | 29.7 | 20.9 | 39.4 | 2.2  | 147.0 | 14.7    |
| 1b                               | do            | do                     | 101.0 | 3.8  | 6.4  | 5.6  | 27.2 | 16.3 | 0    | 40.6 | 17.8 | 29.1 | 4.7  | 151.5 | 15.2    |
| 2a                               | do            | Spring plowed          | 93.1  | 8.1  | 17.8 | 1.3  | 18.8 | 35.9 | 19.7 | 39.1 | 36.6 | 38.8 | 9.1  | 225.2 | 22.5    |
| 2b                               | do            | do                     | 103.1 | 2.2  | 13.4 | 1.9  | 19.4 | 11.9 | 16.3 | 31.3 | 28.8 | 44.4 | 3.8  | 173.4 | 17.3    |
| 3a                               | do            | Fall plowed            | 110.0 | 10.6 | 16.6 | 1.4  | 22.5 | 11.6 | 0    | 29.1 | 24.4 | 43.4 | 3.1  | 162.7 | 16.3    |
| 3b                               | do            | do                     | 95.6  | 3.8  | 7.8  | .9   | 20.0 | 18.1 | 0    | 17.5 | 19.1 | 29.4 | 3.4  | 120.0 | 12.0    |
| 4a                               | Corn          | Disked                 | 101.6 | 12.2 | 5.6  | 5.9  | 19.7 | 21.3 | 19.4 | 35.3 | 43.1 | 46.3 | 17.8 | 226.6 | 22.7    |
| 4b                               | do            | do                     | 90.9  | 16.3 | 8.1  | 7.8  | 27.5 | 25.0 | 21.3 | 39.1 | 37.2 | 39.7 | 20.9 | 242.9 | 24.3    |
| 5a                               | Wheat         | Fall plowed            | 105.0 | 1.6  | 9.4  | 1.3  | 13.8 | 13.8 | 0    | 14.1 | 22.5 | 43.1 | 0    | 119.6 | 12.0    |
| 5b                               | do            | do                     | 98.0  | 9.1  | 15.0 | .8   | 40.6 | 24.7 | 0    | 66.3 | 20.0 | 36.6 | 3.4  | 216.5 | 21.7    |

1 Interpolated yield.



## CROP YIELDS AT THE ASSINNIBOINE (MONT.) FIELD STATION—Continued

TABLE 52.—Annual acre yields of specified crops grown in rotations on individual plots at Assinniboine, Mont., in one or more years from 1916 to 1926—Continued

| Crop and rotation<br>No. or plot | Previous crop | Tillage method | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|----------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| OATS—continued                   |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 6a                               | Barley        | Fall plowed    | 102.5 | 8.4   | 10.6  | 1.3   | 22.8  | 16.9  | 3.4   | 19.7  | 26.9  | 43.4  | 4.4   | 157.8  | 15.8    |
| 6b                               | do            | do             | 93.8  | 5.6   | 15.9  | 1.5   | 31.6  | 19.1  | 0     | 45.3  | 26.9  | 55.6  | 0     | 200.5  | 20.1    |
| 7a                               | Corn          | Spring plowed  | 103.5 | 10.9  | 11.3  | 6.3   | 25.3  | 20.0  | 18.4  | 43.8  | 32.2  | 50.0  | 8.8   | 227.0  | 22.7    |
| 7b                               | do            | do             | 100.3 | 7.5   | 19.4  | 1.3   | 29.4  | 20.9  | 15.3  | 50.9  | 33.8  | 50.3  | 8.4   | 237.2  | 23.7    |
| 8a                               | Fallow        | Fallow         | 99.1  | 22.8  | 12.5  | 3.4   | 26.6  | 37.2  | 23.4  | 56.3  | 50.9  | 45.0  | 22.5  | 300.6  | 30.1    |
| 8b                               | do            | do             | 95.9  | 24.7  | 9.7   | 3.4   | 16.6  | 40.0  | 21.3  | 27.5  | 45.0  | 40.6  | 20.6  | 249.4  | 24.9    |
| 9a                               | Corn          | Spring plowed  | 100.6 | 7.5   | 14.7  | 5.9   | 23.4  | 25.0  | 12.8  | 33.8  | 30.0  | 41.3  | 6.9   | 201.3  | 20.1    |
| 9b                               | do            | do             | 105.0 | 6.6   | 11.9  | 5.3   | 17.2  | 20.9  | 7.5   | 29.7  | 24.1  | 33.8  | 5.3   | 162.3  | 16.2    |
| 13                               | Wheat         | do             | 105.3 | 5.0   | 7.2   | 1.6   | 25.6  | 36.6  | 19.1  | 38.1  | 32.7  | 39.7  | 8.8   | 214.7  | 21.5    |
| 40                               | Corn          | Disked         | 90.9  | 12.2  | 11.6  | 9.1   | 22.2  | 22.2  | 14.1  | 30.0  | 38.1  | 36.9  | 15.0  | 211.4  | 21.1    |
| 41                               | Bromegrass    | Fall plowed    | 91.9  | 10.0  | 8.1   | 9     | 18.4  | 16.3  | 0     | 28.1  | 15.9  | 29.1  | 0     | 126.8  | 12.7    |
| 42                               | Alfalfa       | do             | 106.2 | 16.9  | 13.8  | 4     | 19.7  | 12.2  | 0     | 19.7  | 17.5  | 36.3  | 6.6   | 143.1  | 14.3    |
| 68                               | Wheat         | Fall plowed    | 101.3 | 10.3  | 18.4  | 1.7   | 28.1  | 21.6  | 0     | 26.6  | 31.3  | 43.8  | 1.9   | 183.7  | 18.4    |
| 69                               | do            | do             | 105.6 | 3.8   | 8.4   | 1.9   | 21.6  | 21.9  | 0     | 26.6  | 20.6  | 39.1  | 1.3   | 145.2  | 14.5    |
| 70                               | do            | do             | 102.5 | 3.8   | 17.8  | 2.5   | 20.0  | 25.6  | 0     | 21.3  | 21.6  | 40.6  | 1.6   | 154.8  | 15.5    |
| 114 or 14                        | Winter rye    | Green manured  | 76.6  | 17.8  | 10.9  | 6     | 18.1  | 18.8  | 12.2  | 10.3  | 40.9  | 44.1  | 19.7  | 193.4  | 19.3    |
| 115 or 15                        | Corn          | Disked         | 76.6  | 6.6   | 5.6   | 6.6   | 22.2  | 25.6  | 11.9  | 17.2  | 28.1  | 33.4  | 11.3  | 168.5  | 16.9    |
| 116 or 16                        | Peas          | Green manured  | 84.4  | 16.6  | 4.4   | 3.1   | 21.6  | 21.6  | 13.8  | 13.8  | 32.2  | 25.6  | 12.2  | 164.9  | 16.5    |
| 117 or 17                        | Corn          | Disked         | 82.8  | 7.8   | 9.7   | 8.8   | 22.2  | 26.3  | 16.6  | 26.6  | 28.8  | 23.8  | 16.9  | 187.5  | 18.8    |
| 118 or 18                        | do            | do             | 87.5  | 11.9  | 9.7   | 11.9  | 19.7  | 25.0  | 15.6  | 28.8  | 30.0  | 30.0  | 17.5  | 200.1  | 20.1    |
| 119 or 19                        | Fallow        | Fallow         | 88.8  | 25.6  | 10.9  | 3.1   | 28.4  | 35.3  | 28.8  | 33.8  | 44.7  | 44.1  | 28.4  | 283.1  | 28.3    |
| 131 or 31                        | Sweetclover   | Green manured  | 79.1  | 2.8   | 5.3   | 9     | 18.1  | 30.3  | 9.7   | 14.7  | 40.0  | 30.3  | 25.6  | 177.7  | 17.8    |
| 132 or 32                        | Corn          | Disked         | 72.8  | 8.4   | 6.6   | 3.8   | 17.2  | 26.6  | 14.7  | 30.6  | 27.5  | 25.6  | 16.9  | 177.9  | 17.8    |
| 171 or 71                        | Fallow        | Fallow         | 66.3  | 21.6  | 9.7   | 3.4   | 29.4  | 43.4  | 19.7  | 35.0  | 49.4  | 45.3  | 16.6  | 273.5  | 27.4    |
| 172 or 72                        | Corn          | Disked         | 90.6  | 7.5   | 7.8   | 10.6  | 24.1  | 20.3  | 0     | 34.7  | 27.2  | 32.8  | 16.6  | 181.6  | 18.2    |
| 248a                             | Flax          | Spring plowed  | 82.8  | 2.2   | 12.5  | 1.3   | 25.0  | 26.6  | 26.9  | 30.6  | 42.8  | 37.5  | 0     | 205.4  | 20.5    |
| 248b                             | do            | do             | 82.8  | 5.6   | 14.4  | 3.4   | 22.8  | 28.4  | 16.9  | 29.1  | 46.3  | 44.1  | 6.3   | 217.3  | 21.7    |
| 576                              | Oats          | Disked         | 92.2  | 10.9  | 6.9   | 0     | 19.1  | 19.1  | 7.5   | 13.4  | 26.6  | 21.6  | 0     | 125.1  | 12.5    |
| 577                              | do            | Fall plowed    | 98.8  | 5.9   | 14.4  | 0     | 30.6  | 22.8  | 0     | 21.3  | 23.4  | 38.4  | 3.1   | 159.9  | 16.0    |
| 577                              | do            | Disked         | 103.1 | 10.9  | 5.9   | 0     | 26.2  | 13.1  | 11.6  | 22.8  | 39.1  | 37.8  | 4.1   | 171.5  | 17.2    |
| 578                              | do            | Fall plowed    | 100.0 | 2.2   | 11.9  | 0     | 20.3  | 10.0  | 0     | 16.9  | 20.9  | 31.1  | 2.8   | 116.1  | 11.6    |
| 578                              | do            | Disked         | 93.4  | 10.6  | 8.8   | 0     | 17.5  | 17.5  | 10.3  | 16.9  | 26.3  | 33.8  | 3.1   | 144.8  | 14.5    |
| 578                              | do            | do             | 93.8  | 10.0  | 6.3   | 0     | 19.4  | 14.1  | 10.0  | 20.9  | 25.0  | 31.9  | 4.7   | 142.3  | 14.2    |
| 579                              | Fallow        | Fallow         | 82.8  | 11.6  | 5.0   | 15.0  | 27.8  | 18.8  | 18.8  | 28.8  | 40.3  | 32.8  | 22.5  | 202.6  | 20.3    |
| 579                              | Oats          | Disked         | 82.8  | 11.8  | 0     | 7.8   | 14.1  | 0     | 0     | 25.9  | 28.8  | 25.6  | 2.8   | 116.8  | 11.6    |
| Average                          |               |                |       | 9.7   | 10.9  | 3.0   | 22.3  | 22.6  | 10.2  | 29.1  | 30.8  | 37.5  | 9.1   | 184.7  | 18.6    |
| CORN TOTAL                       |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                                | Corn          | Spring plowed  | 5,200 | 2,040 | 3,760 | 1,750 | 4,800 | 3,250 | 2,750 | 5,110 | 4,580 | 3,940 | 3,450 | 35,430 | 3,543   |
| B                                | do            | Fall plowed    | 3,780 | 1,020 | 3,750 | 930   | 3,700 | 3,520 | 3,060 | 5,170 | 3,110 | 4,200 | 2,800 | 31,250 | 3,125   |
| E                                | do            | Subsoiled      | 4,250 | 1,160 | 3,210 | 980   | 4,700 | 3,530 | 3,250 | 4,980 | 3,450 | 4,320 | 2,210 | 31,790 | 3,179   |
| F                                | do            | Spring listed  | 4,500 | 680   | 1,130 | 240   | 2,700 | 2,360 | 450   | 3,940 | 3,120 | 2,780 | 2,700 | 20,100 | 2,010   |
| Average                          |               |                |       | 1,225 | 2,963 | 975   | 3,975 | 3,165 | 2,363 | 4,800 | 3,578 | 3,810 | 2,790 | 29,643 | 2,964   |
| C or D                           | Fallow        | Fallow         | 4,850 | 3,340 | 3,730 | 1,140 | 5,800 | 4,900 | 4,800 | 5,680 | 5,730 | 4,930 | 4,700 | 44,750 | 4,475   |
| 1a                               | Oats          | Fall plowed    | 4,180 | 1,060 | 1,580 | 380   | 2,550 | 2,410 | 2,900 | 4,180 | 2,820 | 3,970 | 1,460 | 23,310 | 2,331   |
| 1b                               | do            | do             | 4,250 | 840   | 2,600 | 320   | 2,630 | 2,630 | 1,600 | 3,860 | 4,130 | 3,970 | 1,530 | 22,980 | 2,298   |
| 2a                               | do            | Spring plowed  | 4,520 | 950   | 2,550 | 520   | 2,350 | 3,470 | 3,050 | 4,500 | 4,120 | 4,460 | 1,990 | 27,960 | 2,796   |
| 2b                               | do            | do             | 3,700 | 990   | 870   | 500   | 3,300 | 2,470 | 2,300 | 6,400 | 4,120 | 3,740 | 1,870 | 25,270 | 2,527   |
| 3a                               | do            | Fall plowed    | 4,900 | 1,120 | 3,860 | 240   | 3,550 | 2,610 | 2,950 | 4,120 | 3,670 | 4,030 | 1,500 | 27,650 | 2,765   |
| 3b                               | do            | do             | 4,250 | 950   | 2,900 | 350   | 2,500 | 3,966 | 1,650 | 3,700 | 3,630 | 3,560 | 1,450 | 24,656 | 2,466   |
| 4a                               | Wheat         | do             | 4,200 | 720   | 3,430 | 360   | 2,800 | 2,080 | 2,100 | 4,590 | 3,730 | 3,870 | 1,250 | 24,940 | 2,494   |
| 4b                               | do            | do             | 4,250 | 980   | 3,590 | 450   | 2,550 | 2,240 | 3,100 | 4,840 | 3,730 | 4,420 | 1,860 | 27,750 | 2,775   |
| 6a                               | Oats          | do             | 3,800 | 2,300 | 3,490 | 410   | 3,350 | 2,440 | 2,350 | 4,910 | 3,990 | 4,120 | 2,120 | 29,480 | 2,948   |
| 6b                               | do            | do             | 4,000 | 700   | 3,090 | 310   | 2,100 | 2,050 | 3,300 | 3,900 | 3,170 | 4,690 | 2,000 | 25,370 | 2,537   |
| 7a                               | Barley        | Spring plowed  | 4,700 | 1,360 | 2,440 | 620   | 2,500 | 3,220 | 2,750 | 5,280 | 4,670 | 4,280 | 2,390 | 29,510 | 2,951   |
| 7b                               | do            | do             | 5,200 | 1,180 | 2,220 | 600   | 3,400 | 4,020 | 2,650 | 4,480 | 4,020 | 3,860 | 2,590 | 28,990 | 2,899   |
| 9a                               | Wheat         | do             | 5,050 | 1,070 | 2,620 | 410   | 2,600 | 3,200 | 2,850 | 4,870 | 4,610 | 4,360 | 2,130 | 28,700 | 2,870   |
| 9b                               | do            | do             | 5,000 | 1,440 | 1,080 | 270   | 2,650 | 2,590 | 2,550 | 4,380 | 3,100 | 3,420 | 2,020 | 23,500 | 2,350   |
| 13                               | Oats          | do             | 4,150 | 1,160 | 2,140 | 480   | 3,300 | 3,070 | 3,000 | 5,000 | 3,609 | 3,720 | 2,290 | 27,769 | 2,767   |
| 40                               | do            | Fall plowed    | 4,700 | 1,110 | 3,620 | 300   | 2,550 | 1,850 | 1,850 | 3,230 | 2,650 | 3,250 | 1,480 | 21,890 | 2,189   |
| 41                               | do            | Spring plowed  | 4,200 | 1,150 | 2,250 | 420   | 3,300 | 2,890 | 3,250 | 3,410 | 4,340 | 3,520 | 2,470 | 27,000 | 2,700   |
| 42                               | do            | do             | 4,100 | 1,690 | 1,700 | 400   | 2,650 | 2,830 | 2,500 | 3,310 | 3,860 | 3,180 | 2,210 | 24,330 | 2,433   |
| 49                               | Wheat         | Fall plowed    | 4,700 | 310   | 3,000 | 180   | 1,950 | 1,950 | 1,700 | 3,260 | 1,810 | 3,710 | 1,500 | 19,370 | 1,937   |
| 53                               | Barley        | Spring plowed  | 3,850 | 760   | 1,760 | 320   | 2,900 | 2,460 | 2,900 | 4,380 | 2,960 | 4,230 | 2,160 | 24,830 | 2,483   |
| 54                               | do            | do             | 4,300 | 720   | 1,410 | 110   | 3,650 | 2,370 | 2,650 | 4,110 | 3,670 | 3,970 | 2,050 | 24,710 | 2,471   |
| 60                               | do            | Fall plowed    | 5,300 | 1,020 | 2,500 | 320   | 2,250 | 2,090 | 1,200 | 3,500 | 2,360 | 3,730 | 1,450 | 20,420 | 2,042   |
| 68                               | Oats          | Spring plowed  | 4,750 | 1,920 | 1,820 | 560   | 3,600 | 3,430 | 2,900 | 5,830 | 4,760 | 3,570 | 2,300 | 30,690 | 3,069   |
| 69                               | do            | do             | 5,400 | 1,720 | 1,670 | 550   | 2,500 | 3,350 | 4,100 | 4,460 | 3,670 | 3,250 | 1,930 | 27,550 | 2,755   |
| 70                               | do            | do             | 4,400 | 1,340 | 1,610 | 600   | 3,200 | 4,370 | 3,750 | 4,270 | 3,540 | 2,820 | 1,760 | 27,260 | 2,726   |
| 85                               | Winter wheat  | Fall plowed    | 4,050 | 780   | 1,000 | 310   | 2,300 | 1,910 | 1,200 | 4,650 | 3,940 | 4,130 | 1,360 | 21,580 | 2,158   |
| 114 or 14                        | Oats          | Spring plowed  | 4,700 | 740   | 1,410 | 370   | 3,150 | 2,920 | 2,750 | 3,830 | 2,830 | 4,040 | 1,860 | 23,900 | 2,390   |
| 115 or 15                        | Winter wheat  | do             | 4,350 | 800   | 1,090 | 280   | 3,000 | 2,756 | 1,900 | 4,110 | 3,030 | 3,530 | 1,690 |        |         |



## CROP YIELDS AT THE ASSINNIBOINE (MONT.) FIELD STATION—Continued

TABLE 52.—Annual acre yields of specified crops grown in rotations on individual plots at Assiniboine, Mont., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|---------------|----------------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| CORN GRAIN                    |               |                |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Corn          | Spring plowed  |      | 0    | 8.5  | 0    | 0    | 0    | 0    | 34.1 | 14.5 | 28.1 | 5.9  | 91.1  | 9.1     |
| B.....                        | do            | Fall plowed    |      | 0    | 13.3 | 0    | 0    | 0    | 0    | 34.3 | 9.6  | 27.3 | 1.4  | 85.9  | 8.6     |
| E.....                        | do            | Subsoiled      |      | 0    | 12.8 | 0    | 0    | 0    | 0    | 34.6 | 11.4 | 27.8 | 2.5  | 89.1  | 8.9     |
| F.....                        | do            | Spring listed  |      | 0    | 4.3  | 0    | 0    | 0    | 0    | 24.9 | 7.7  | 21.6 | 5.5  | 64.0  | 6.4     |
| Average.....                  |               |                |      | 0    | 9.7  | 0    | 0    | 0    | 0    | 32.0 | 10.8 | 26.2 | 3.8  | 82.5  | 8.3     |
| C or D.....                   | Fallow        | Fallowed       |      | 0    | 18.4 | 0    | 0    | 0    | 0    | 38.1 | 19.1 | 33.3 | 13.1 | 122.0 | 12.2    |
| 1a.....                       | Oats          | Fall plowed    |      | 0    | 3.0  | 0    | 0    | 0    | 0    | 29.4 | 7.5  | 24.6 | 0    | 64.5  | 6.5     |
| 1b.....                       | do            | do             |      | 0    | 6.5  | 0    | 0    | 0    | 0    | 18.3 | 10.4 | 16.3 | 0    | 51.5  | 5.2     |
| 2a.....                       | do            | Spring plowed  |      | 0    | 9.9  | 0    | 0    | 0    | 0    | 19.0 | 14.3 | 25.8 | 0    | 79.0  | 7.9     |
| 2b.....                       | do            | do             |      | 0    | 1.5  | 0    | 0    | 0    | 0    | 32.6 | 4.5  | 23.6 | 0    | 62.2  | 6.2     |
| 3a.....                       | do            | Fall plowed    |      | 0    | 17.3 | 0    | 0    | 0    | 0    | 25.8 | 12.0 | 24.8 | 0    | 79.9  | 8.0     |
| 3b.....                       | do            | do             |      | 0    | 9.4  | 0    | 0    | 0    | 0    | 15.9 | 8.4  | 16.8 | 0    | 50.5  | 5.1     |
| 4a.....                       | Wheat         | do             |      | 0    | 14.0 | 0    | 0    | 0    | 0    | 29.0 | 10.0 | 27.6 | 0    | 80.6  | 8.1     |
| 4b.....                       | do            | do             |      | 0    | 13.5 | 0    | 0    | 0    | 0    | 29.1 | 10.0 | 27.2 | 0    | 79.8  | 8.0     |
| 6a.....                       | Oats          | do             |      | 0    | 14.3 | 0    | 0    | 0    | 0    | 32.1 | 9.6  | 25.3 | 0    | 81.3  | 8.1     |
| 6b.....                       | do            | do             |      | 0    | 12.0 | 0    | 0    | 0    | 0    | 22.4 | 7.3  | 28.1 | 0    | 69.8  | 7.0     |
| 7a.....                       | Barley        | Spring plowed  |      | 0    | 5.1  | 0    | 0    | 0    | 0    | 31.4 | 14.8 | 28.6 | 0    | 79.9  | 8.0     |
| 7b.....                       | do            | do             |      | 0    | 6.8  | 0    | 0    | 0    | 0    | 22.9 | 8.8  | 25.1 | 0    | 63.6  | 6.4     |
| 9a.....                       | Wheat         | do             |      | 0    | 7.1  | 0    | 0    | 0    | 0    | 28.8 | 13.6 | 26.4 | 0    | 75.9  | 7.6     |
| 9b.....                       | do            | do             |      | 0    | 2.3  | 0    | 0    | 0    | 0    | 21.0 | 5.5  | 21.7 | 0    | 50.5  | 5.1     |
| 13.....                       | Oats          | do             |      | 0    | 7.0  | 0    | 0    | 0    | 0    | 29.9 | 17.5 | 27.2 | 0    | 71.6  | 7.2     |
| 40.....                       | do            | Fall plowed    |      | 0    | 16.4 | 0    | 0    | 0    | 0    | 18.9 | 7.1  | 22.1 | 0    | 64.5  | 6.5     |
| 41.....                       | do            | Spring plowed  |      | 0    | 7.9  | 0    | 0    | 0    | 0    | 23.0 | 9.8  | 22.4 | 0    | 63.1  | 6.3     |
| 42.....                       | do            | do             |      | 0    | 3.5  | 0    | 0    | 0    | 0    | 19.9 | 8.9  | 24.1 | 0    | 56.4  | 5.6     |
| 49.....                       | Wheat         | Fall plowed    |      | 0    | 12.1 | 0    | 0    | 0    | 0    | 18.0 | 2.5  | 19.4 | 0    | 52.0  | 5.2     |
| 53.....                       | Barley        | Spring plowed  |      | 0    | 3.5  | 0    | 0    | 0    | 0    | 23.5 | 3.0  | 24.8 | 0    | 54.8  | 5.5     |
| 54.....                       | do            | do             |      | 0    | .9   | 0    | 0    | 0    | 0    | 20.1 | 5.7  | 23.7 | 0    | 50.4  | 5.0     |
| 60.....                       | do            | Fall plowed    |      | 0    | 8.3  | 0    | 0    | 0    | 0    | 18.6 | 3.6  | 19.6 | 0    | 50.1  | 5.0     |
| 68.....                       | Oats          | Spring plowed  |      | 0    | 5.4  | 0    | 0    | 0    | 0    | 32.5 | 12.0 | 24.8 | 0    | 74.7  | 7.5     |
| 69.....                       | do            | do             |      | 0    | 4.4  | 0    | 0    | 0    | 0    | 27.9 | 8.2  | 23.7 | 0    | 64.2  | 6.4     |
| 70.....                       | do            | do             |      | 0    | 2.3  | 0    | 0    | 0    | 0    | 28.1 | 8.6  | 21.4 | 0    | 60.4  | 6.0     |
| 85.....                       | Winter wheat  | Fall plowed    |      | 0    | 3.1  | 0    | 0    | 0    | 0    | 27.8 | 8.9  | 24.5 | 0    | 64.3  | 6.4     |
| 114 or 14.....                | Oats          | Spring plowed  |      | 0    | 3.8  | 0    | 0    | 0    | 0    | 22.0 | 2.9  | 22.3 | 0    | 51.0  | 5.1     |
| 115 or 15.....                | Winter wheat  | do             |      | 0    | 2.0  | 0    | 0    | 0    | 0    | 14.9 | 3.2  | 19.9 | 0    | 40.0  | 4.0     |
| 116 or 16.....                | Oats          | do             |      | 0    | 1.3  | 0    | 0    | 0    | 0    | 21.8 | 3.2  | 24.7 | 0    | 51.0  | 5.1     |
| 117 or 17.....                | Winter wheat  | do             |      | 0    | 2.9  | 0    | 0    | 0    | 0    | 20.6 | 2.9  | 17.7 | 0    | 44.1  | 4.4     |
| 118 or 18.....                | do            | do             |      | 0    | .8   | 0    | 0    | 0    | 0    | 21.6 | 8.6  | 17.7 | 0    | 48.7  | 4.9     |
| 119 or 19.....                | Oats          | do             |      | 0    | 4.0  | 0    | 0    | 0    | 0    | 20.0 | 7.5  | 23.1 | 0    | 54.6  | 5.5     |
| 131 or 31.....                | do            | do             |      | 0    | 3.3  | 0    | 0    | 0    | 0    | 17.0 | 4.1  | 23.7 | 0    | 48.1  | 4.8     |
| 132 or 32.....                | Winter wheat  | do             |      | 0    | 1.0  | 0    | 0    | 0    | 0    | 19.9 | 4.3  | 15.8 | 0    | 41.0  | 4.1     |
| 149.....                      | do            | Fall plowed    |      | 0    | 8.4  | 0    | 0    | 0    | 0    | 14.3 | 4.5  | 19.1 | 0    | 46.3  | 4.6     |
| 171 or 71.....                | Oats          | Spring plowed  |      | 0    | 1.3  | 0    | 0    | 0    | 0    | 18.6 | 5.7  | 25.4 | 0    | 51.0  | 5.1     |
| 172 or 72.....                | Winter wheat  | do             |      | 0    | .1   | 0    | 0    | 0    | 0    | 21.8 | 3.6  | 25.9 | 0    | 51.4  | 5.1     |
| 243a.....                     | Flax          | do             |      | 0    | 13.4 | 0    | 0    | 0    | 0    | 27.4 | 9.5  | 25.7 | 0    | 76.0  | 7.6     |
| 243b.....                     | do            | do             |      | 0    | 17.0 | 0    | 0    | 0    | 0    | 28.5 | 12.9 | 31.9 | 0    | 90.3  | 9.0     |
| 244a.....                     | do            | Fall plowed    |      | 0    | 10.4 | 0    | 0    | 0    | 0    | 29.5 | 6.1  | 23.0 | 0    | 69.0  | 6.9     |
| 244b.....                     | do            | do             |      | 0    | 10.0 | 0    | 0    | 0    | 0    | 28.9 | 4.5  | 20.9 | 0    | 64.3  | 6.4     |
| 245a.....                     | do            | Spring plowed  |      | 0    | .3   | 0    | 0    | 0    | 0    | 25.8 | 9.5  | 26.8 | 0    | 62.4  | 6.2     |
| 245b.....                     | do            | do             |      | 0    | .4   | 0    | 0    | 0    | 0    | 31.9 | 13.9 | 27.7 | 0    | 73.9  | 7.4     |
| 246a.....                     | do            | do             |      | 0    | .8   | 0    | 0    | 0    | 0    | 22.9 | 10.5 | 22.5 | 0    | 56.7  | 5.7     |
| 246b.....                     | do            | do             |      | 0    | 1.0  | 0    | 0    | 0    | 0    | 28.6 | 9.5  | 24.4 | 0    | 63.5  | 6.4     |
| Average.....                  |               |                |      | 0    | 6.2  | 0    | 0    | 0    | 0    | 24.3 | 7.8  | 23.5 | 0    | 61.8  | 6.2     |
| BARLEY                        |               |                |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Barley        | Spring plowed  | 74.2 | 7.1  | 5.0  | 1.5  | 8.1  | 9.0  | 4.2  | 10.8 | 23.8 | 23.8 | 8.5  | 101.8 | 10.2    |
| Aa.....                       | do            | do             | 66.3 | 4.6  | 4.6  | 1.8  | 11.9 | 12.3 | 5.4  | 9.4  | 22.5 | 23.8 | 8.3  | 104.6 | 10.5    |
| Ab.....                       | do            | do             | 74.0 | 7.7  | 4.4  | 1.5  | 12.9 | 16.7 | 7.7  | 15.4 | 25.0 | 23.5 | 9.2  | 124.0 | 12.4    |
| Ac.....                       | do            | do             | 61.5 | 8.1  | 4.6  | 1.7  | 15.0 | 13.8 | 5.6  | 12.1 | 29.8 | 26.3 | 9.2  | 116.2 | 11.6    |
| B.....                        | do            | Fall plowed    | 76.1 | 7.1  | 5.0  | 1.0  | 10.6 | 2.9  | 0    | 9.2  | 17.3 | 24.0 | 3.1  | 80.2  | 8.0     |
| Bc.....                       | do            | do             | 66.7 | 8.1  | 2.7  | 1.5  | 12.1 | 9.8  | 3.1  | 9.6  | 19.2 | 22.9 | 4.8  | 93.8  | 9.4     |
| Bb.....                       | do            | do             | 66.7 | 8.5  | 4.6  | 1.7  | 11.9 | 7.1  | 3.1  | 9.4  | 24.0 | 28.8 | 5.0  | 104.1 | 10.4    |
| E.....                        | do            | Subsoiled      | 69.8 | 9.4  | 6.9  | .6   | 4.8  | 4.2  | 0    | 7.5  | 14.0 | 24.4 | 1.7  | 73.5  | 7.4     |
| Bc.....                       | do            | do             | 60.4 | 7.1  | 6.0  | 1.5  | 13.1 | 1.9  | 4.6  | 13.3 | 22.5 | 30.2 | 8.8  | 109.0 | 10.9    |
| F.....                        | do            | Fall listed    | 66.7 | 10.8 | 7.1  | 2.1  | 10.2 | 9.6  | 3.5  | 1.2  | 17.5 | 14.4 | 1.0  | 77.4  | 7.7     |
| Average.....                  |               |                |      | 7.9  | 5.1  | 1.5  | 10.6 | 8.7  | 3.7  | 9.8  | 21.6 | 24.2 | 6.0  | 98.5  | 9.9     |
| C or D.....                   | Fallow        | Fallowed       | 64.4 | 18.5 | 10.4 | 4.0  | 14.6 | 14.8 | 13.5 | 15.8 | 38.1 | 37.1 | 22.1 | 188.9 | 18.9    |
| Ca or Da.....                 | do            | do             | 56.3 | 16.3 | 6.0  | 1.8  | 18.8 | 22.7 | 19.2 | 20.2 | 44.8 | 47.1 | 25.8 | 222.7 | 22.3    |
| Cb or Db.....                 | do            | do             | 54.8 | 18.8 | 9.4  | 2.1  | 17.1 | 34.8 | 20.2 | 25.0 | 44.6 | 49.6 | 29.2 | 250.8 | 25.1    |
| Cc or De.....                 | do            | do             | 47.5 | 21.9 | 12.1 | 1.7  | 17.3 | 33.3 | 19.0 | 20.2 | 43.8 | 44.0 | 30.2 | 243.5 | 24.4    |
| Average.....                  |               |                |      | 18.9 | 9.5  | 2.4  | 17.0 | 14.4 | 18.0 | 20.3 | 42.8 | 44.5 | 26.8 | 226.5 | 22.7    |
| 6a.....                       | Corn          | Disked         | 80.2 | 12.1 | 8.3  | 8.5  | 14.6 | 12.1 | 10.4 | 18.8 | 29.4 | 31.7 | 16.3 | 162.2 | 16.2    |
| 6b.....                       | do            | do             | 79.0 | 13.1 | 9.4  | 4.8  | 12.9 | 8.8  | 16.0 | 27.1 | 27.5 | 44.2 | 20.8 | 184.6 | 18.5    |
| 7a.....                       | Oats          | Spring plowed  | 66.9 | 10.8 | 8.3  | 4.0  | 14.2 | 14.4 | 12.9 | 29.2 | 31.0 | 35.8 | 9.2  | 169.8 | 17.0    |
| 7b.....                       | do            | do             | 59.0 | 6.5  | 11.5 | 0    | 17.1 | 16.9 | 9.2  | 22.5 | 30.0 | 33.5 | 10.8 | 158.0 | 15.8    |
| 53.....                       | Winter rye    | Green manured  | 70.0 | 13.8 | 5.6  | .5   | 10.0 | 5.6  | 9.4  | 15.6 | 31.9 | 34.4 | 21.0 | 147.8 | 14.8    |
| 54.....                       | Peas          | do             | 70.8 | 14.2 | 4.8  | 4.0  | 13.5 | 7.7  | 7.1  | 12.5 | 29.4 | 22.5 | 14.2 | 129.9 | 13.0    |
| 60.....                       | Corn          | Disked         | 73.0 | 10.4 | 8.8  | 5.4  | 13.1 | 7.7  | 6.9  | 9.8  | 25.2 | 24.6 | 15.2 | 127.1 | 12.7    |
| 85.....                       | Flax          | do             | 75.2 | 4.4  | 6.7  | 2.0  | 14.8 | 10.8 | 4.6  | 15.2 | 31.0 | 29.8 | 6.9  | 126.2 | 12.6    |
| Average.....                  |               |                |      | 10.7 | 7.9  | 3.7  | 13.8 | 10.5 | 9.5  | 18.8 | 29.4 | 32.1 | 14.3 | 150.7 | 15.1    |
| FLAX                          |               |                |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Flax          | Spring plowed  | 20.0 | .3   | 0    | 0    | .5   | 0    | .5   | 0    | 0    | 2.3  | 0    | 3.6   | .4      |
| B.....                        | do            | Fall plowed    | 20.0 | .5   | 0    | 0    | .5   | 0    | 0    | 0    | 0    | 3.2  | 0    | 4.2   | .4      |
| E.....                        | do            | Subsoiled      | 20.5 | .4   | 0    | 0    | 1.3  | 1.3  | 0    | 0    | 0    | 3.8  | 0    | 6.8   | .7      |
| F.....                        | do            | Fall listed    | 20.4 | .7   | 0    | 0    | 1.8  | 1.3  | 2.7  | 2.5  | 0    | 3.0  | 0    | 12.0  | 1.2     |
| Average.....                  |               |                |      | .5   | 0    | 0    | 1.0  | .7   | .8   | .6   | 0    | 3.1  | 0    | 6.7   | .7      |
| C or D.....                   | Fallow        | Fallowed       | 18.4 | 4.0  | 0    | 0    | 1.3  | 0    | 1.5  | 0    | 0    | 5.7  | 0    | 12.5  | 1.3     |

1 Interpolated yield.

2 Spring plowed.

## CROP YIELDS AT THE ASSINNIBOINE (MONT.) FIELD STATION—Continued

TABLE 52.—Annual acre yields of specified crops grown in rotations on individual plots at Assiniboine, Mont., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1916 | 1917  | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926  | Total | Average |
|-------------------------------|---------------|----------------|------|-------|------|------|------|------|------|------|------|------|-------|-------|---------|
| FLAX—continued                |               |                |      |       |      |      |      |      |      |      |      |      |       |       |         |
| 85                            | Corn          | Spring plowed  | 19.6 | .6    | 0    | 0    | 1.8  | 1.1  | 1.8  | 4.1  | 7.3  | 7.5  | 0     | 24.2  | 2.4     |
| 243a                          | do            | do             | 20.7 | 1.8   | 0    | 0    | 2.0  | 2.1  | 2.9  | 0    | 3.6  | 5.4  | 0     | 17.8  | 1.8     |
| 243b                          | do            | do             |      | 2.7   | 0    | 0    | 4.3  | 2.5  | 5.2  | 0    | 8.6  | 8.9  | 0     | 32.2  | 3.2     |
| 244a                          | do            | Fall plowed    | 18.8 | 2.5   | 0    | 0    | 4.3  | 2.0  | 0    | 0    | 0    | 6.4  | 0     | 15.2  | 1.5     |
| 244b                          | do            | do             |      | .9    | 0    | 0    | 1.8  | .9   | 3.6  | 0    | 0    | 5.7  | 0     | 12.9  | 1.3     |
| 245a                          | do            | Disked         | 19.6 | 1.1   | 0    | 0    | 2.3  | 2.7  | 4.5  | 0    | 3.9  | 9.6  | 0     | 24.1  | 2.4     |
| 245b                          | do            | do             |      | 1.7   | 0    | 0    | 5.0  | 2.0  | 7.9  | 4.6  | 3.9  | 9.5  | 0     | 34.6  | 3.5     |
| 246a                          | do            | do             | 20.0 | 1.6   | 0    | 0    | 4.8  | 2.5  | 4.5  | 0    | 0    | 8.9  | 0     | 22.3  | 2.2     |
| 246b                          | do            | do             |      | 1.2   | 0    | 0    | 2.9  | 1.3  | 4.3  | 3.2  | 0    | 4.8  | 0     | 17.7  | 1.8     |
| 247a                          | Wheat         | Spring plowed  | 18.8 | 2.9   | 0    | 0    | 1.4  | 1.6  | 2.9  | 5.9  | 5.9  | 9.5  | 0     | 30.1  | 3.0     |
| 247b                          | do            | do             |      | 1.3   | 0    | 0    | 2.9  | 1.4  | 5.4  | 2.5  | 6.4  | 6.4  | 0     | 26.3  | 2.6     |
| 248a                          | Oats          | do             | 19.1 | 1.8   | 0    | 0    | 3.0  | 2.3  | 2.7  | 6.1  | 4.6  | 9.1  | 0     | 29.6  | 3.0     |
| 248b                          | do            | do             |      | .9    | 0    | 0    | 2.7  | .9   | 3.4  | 2.1  | 5.9  | 4.5  | 0     | 20.4  | 2.0     |
| Average                       |               |                |      | 6 1.6 | 0    | 7 0  | 3.0  | 1.8  | 3.8  | 2.2  | 3.9  | 7.4  | 0     | 23.6  | 2.4     |
| WINTER RYE                    |               |                |      |       |      |      |      |      |      |      |      |      |       |       |         |
| Ba                            | Winter rye    | Fall plowed    |      | 4.3   | 4.2  | 0    | 3.8  | 6.8  | 4.3  | 0    | 15.2 | 8.9  | 11.3  | 58.8  | 5.9     |
| Bb                            | do            | do             |      | 6.3   | 4.6  | 0    | 3.4  | 8.6  | 5.0  | 0    | 11.6 | 9.8  | 11.8  | 61.1  | 6.1     |
| Bc                            | do            | Subsoiled      |      | 7.0   | 5.7  | 0    | 2.7  | 4.3  | 3.2  | 0    | 12.7 | 10.2 | 11.8  | 57.6  | 5.8     |
| Average                       |               |                |      | 5.9   | 4.8  | 0    | 3.3  | 6.6  | 4.2  | 0    | 13.2 | 9.6  | 11.6  | 59.2  | 5.9     |
| BROMEGRASS                    |               |                |      |       |      |      |      |      |      |      |      |      |       |       |         |
| 41                            | Wheat         | Disked         | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 750  | 250   | 1,000 | 100     |
|                               | Bromegrass    | do             | 0    | 960   | 0    | 0    | 0    | 470  | 0    | 0    | 0    | 810  | 160   | 2,400 | 240     |
|                               | do            | do             | 0    | 1,120 | 0    | 0    | 0    | 570  | 720  | 0    | 370  | 0    | 200   | 2,680 | 268     |
| Average                       |               |                |      | 693   | 0    | 0    | 0    | 347  | 240  | 0    | 123  | 520  | 203   | 2,127 | 213     |
| ALFALFA                       |               |                |      |       |      |      |      |      |      |      |      |      |       |       |         |
| 42                            | Wheat         | Fall plowed    | 750  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0       |
|                               | Alfalfa       | do             | 950  | 1,080 | 395  | 650  | 0    | 0    | 0    | 0    | 0    | 700  | 1,750 | 4,635 | 464     |
|                               | do            | do             | 0    | 1,160 | 0    | 380  | 600  | 0    | 890  | 0    | 0    | 710  | 1,280 | 5,020 | 502     |
| Average                       |               |                |      | 747   | 132  | 343  | 200  | 0    | 297  | 0    | 0    | 490  | 1,010 | 3,218 | 322     |

6 Average for 1917 is the same for 12 old plots as for all 18.

7 A very light yield was cut with a mower but destroyed by wind.



## CROP YIELDS AT THE MOCCASIN (MONT.) FIELD STATION

TABLE 53.—Annual acre yields of specified crops grown in rotations on individual plots at Moccasin, Mont., in one or more years from 1908 to 1926

[For descriptions of rotations, see pages 32-43. For climatic conditions 1908 to 1924, see Figure 6 (p. 12). Miscellaneous Circular No. 81. Yields of total weight of corn, grass, alfalfa, and clover are given in pounds; all other yields are stated in bushels. Rotations 64, 67, 68, and 305 were commenced in 1910. Rotations 64, 67, and 305 replaced rotations 44, 47, and 48, respectively. In rotation 64, oats were seeded on fallow in 1911 and the yield for 1911 is not included in the averages. Commencing with 1922, all potato and corn-stubble plots have been spring-tooth harrowed instead of double disked. Rotations 243, 244, 245, and 246 were commenced in 1914]

| Crop, field, and rotation No. or plot | Previous crop     | Tillage method         | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|---------------------------------------|-------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>                   |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Field A:                              |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Winter wheat..... | Late fall plowed.....  | 56.5 | 23.8 | 22.0 | 13.2 | 25.5 | 16.3 | 25.0 | 1.0  | 1.0  | 1.0  | 18.3 | 0.7  | 8.3  | 1.0  | 23.3 | 2.6  | 15.0 | 1.5  | 1.0  | 199.4 | 11.7    |
| B.....                                | do.....           | Early fall plowed..... | 63.8 | 24.0 | 23.5 | 12.2 | 23.2 | 16.3 | 28.5 | 1.0  | 1.0  | 1.0  | 15.8 | 0    | 0    | 1.0  | 22.0 | 5.2  | 15.0 | 1.0  | 1.0  | 155.7 | 10.9    |
| Average.....                          |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| C or D.....                           | Fallow.....       | Fallow.....            | 55.7 | 22.0 | 31.7 | 17.5 | 31.8 | 25.5 | 51.5 | 1.0  | 1.0  | 1.0  | 24.2 | 8.7  | 12.2 | 1.0  | 35.0 | 23.0 | 33.0 | 21.3 | 17.3 | 354.7 | 20.9    |
| E.....                                | Winter wheat..... | Subsided.....          | 31.0 | 23.2 | 22.4 | 12.5 | 26.2 | 15.5 | 28.3 | 1.0  | 1.0  | 1.0  | 17.8 | 0    | 0    | 1.0  | 22.5 | 7.7  | 16.5 | 1.0  | 1.0  | 192.6 | 11.3    |
| F.....                                | do.....           | Fall listed.....       | 32.0 | 21.7 | 22.3 | 10.8 | 24.3 | 20.2 | 21.2 | 1.0  | 1.0  | 1.0  | 8.3  | 0    | 0    | 1.0  | 21.8 | 3.2  | 13.5 | 2.7  | 1.0  | 170.0 | 10.0    |
| Average.....                          |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 64.....                               | Winter rye.....   | Green manured.....     |      |      | 30.5 | 11.2 | 31.3 | 22.5 | 56.5 | 1.0  | 1.0  | 1.0  | 21.0 | 2.2  | 14.5 | 1.0  | 22.0 | 16.5 | 32.8 | 16.7 | 1.0  | 254.2 | 16.9    |
| 51.....                               | do.....           | do.....                |      |      |      |      | 21.7 | 24.7 | 55.7 | 1.0  | 1.0  | 1.0  | 26.8 | 6.7  | 14.7 | 1.0  | 20.7 | 24.2 | 41.2 | 23.3 | 1.0  | 247.0 | 19.0    |
| 53.....                               | Corn.....         | do.....                |      |      |      |      | 16.7 | 24.8 | 46.0 | 1.0  | 1.0  | 1.0  | 17.0 | 8.2  | 13.8 | 1.0  | 27.0 | 30.0 | 21.3 | 16.3 | 1.0  | 222.1 | 17.1    |
| 54.....                               | do.....           | do.....                |      |      |      |      | 25.3 | 24.0 | 36.5 | 1.0  | 1.0  | 1.0  | 15.8 | 3.5  | 15.3 | 1.0  | 33.0 | 29.3 | 23.0 | 16.3 | 1.0  | 215.0 | 16.5    |
| 57.....                               | Fallow.....       | do.....                |      |      |      |      | 30.7 | 21.3 | 55.5 | 1.0  | 1.0  | 1.0  | 11.7 | 4.7  | 12.5 | 1.0  | 33.2 | 27.8 | 30.8 | 16.8 | 1.0  | 235.8 | 18.1    |
| 85.....                               | do.....           | do.....                |      |      |      |      | 28.2 | 18.8 | 53.5 | 1.0  | 1.0  | 1.0  | 12.3 | 5.7  | 18.0 | 1.0  | 31.5 | 31.0 | 31.0 | 19.7 | 1.0  | 242.0 | 18.6    |
| 92.....                               | Pear.....         | do.....                |      |      |      |      | 33.3 | 22.3 | 52.0 | 1.0  | 1.0  | 1.0  | 18.5 | 3.8  | 17.8 | 1.0  | 30.2 | 22.3 | 35.5 | 20.8 | 1.0  | 246.5 | 19.0    |
| 114.....                              | Corn.....         | Green manured.....     |      |      |      |      | 22.3 | 18.3 | 30.3 | 1.0  | 1.0  | 1.0  | 13.7 | 2.5  | 17.0 | 1.0  | 28.7 | 24.2 | 25.3 | 16.7 | 1.0  | 194.0 | 14.9    |
| 115.....                              | Winter rye.....   | do.....                |      |      |      |      | 20.7 | 20.3 | 39.7 | 1.0  | 1.0  | 1.0  | 20.7 | 4.0  | 10.7 | 1.0  | 33.0 | 27.2 | 30.8 | 16.0 | 1.0  | 179.7 | 13.8    |
| 116.....                              | Corn.....         | Green manured.....     |      |      |      |      | 22.3 | 1.0  | 49.0 | 1.0  | 1.0  | 1.0  | 14.3 | 3.0  | 15.8 | 1.0  | 30.7 | 24.0 | 30.3 | 17.7 | 1.0  | 185.0 | 14.2    |
| 117.....                              | Pear.....         | do.....                |      |      |      |      | 25.0 | 21.2 | 55.5 | 1.0  | 1.0  | 1.0  | 14.2 | 7.2  | 17.3 | 1.0  | 32.8 | 31.3 | 36.0 | 21.0 | 1.0  | 200.5 | 20.0    |
| 118.....                              | Fallow.....       | do.....                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average.....                          |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| <b>SPRING WHEAT</b>                   |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Field A:                              |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Wheat.....        | Spring plowed.....     | 33.7 | 10.7 | 22.2 | 0    | 23.5 | 16.2 | 28.7 | 19.7 | 19.7 | 8.8  | 17.5 | 5    | 17.7 | 19.2 | 10.7 | 6.3  | 3    | 4.5  | 19.5 | 259.7 | 14.4    |
| B.....                                | do.....           | Fall plowed.....       | 33.4 | 14.0 | 22.0 | 0    | 18.5 | 15.8 | 27.0 | 21.2 | 21.2 | 8.0  | 16.8 | 3    | 14.2 | 11.8 | 15.0 | 11.8 | 5.7  | 6.5  | 10.0 | 252.0 | 14.0    |
| Average.....                          |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| C or D.....                           | Fallow.....       | Fallow.....            | 33.6 | 12.4 | 22.1 | 0    | 21.0 | 16.0 | 27.9 | 20.5 | 20.5 | 8.4  | 17.2 | 4    | 16.0 | 15.5 | 12.9 | 9.1  | 3.0  | 5.5  | 14.8 | 255.9 | 14.2    |
| 1.....                                | do.....           | do.....                | 34.1 | 6.4  | 19.2 | 0    | 22.3 | 18.3 | 34.7 | 23.3 | 23.3 | 11.7 | 20.0 | 5.2  | 13.7 | 18.8 | 21.2 | 24.0 | 22.0 | 23.0 | 21.7 | 339.6 | 18.9    |
| 2.....                                | Corn.....         | do.....                | 34.8 | 11.7 | 28.0 | 0    | 24.0 | 21.7 | 33.8 | 23.0 | 23.0 | 12.5 | 20.8 | 3.8  | 16.3 | 19.3 | 20.7 | 26.7 | 19.2 | 19.2 | 15.2 | 350.7 | 19.5    |
| 3.....                                | do.....           | do.....                | 33.2 | 11.7 | 21.3 | 0    | 23.8 | 18.5 | 31.8 | 21.8 | 21.8 | 10.0 | 21.0 | 3.0  | 14.2 | 17.3 | 21.5 | 23.7 | 21.7 | 18.5 | 15.8 | 328.8 | 18.3    |
| 4.....                                | Oats.....         | do.....                | 31.3 | 15.0 | 23.3 | 0    | 26.3 | 18.5 | 28.5 | 27.3 | 27.3 | 10.2 | 21.3 | 3.8  | 14.5 | 14.8 | 23.3 | 23.8 | 15.8 | 19.3 | 11.7 | 326.6 | 18.1    |
| 5.....                                | do.....           | do.....                | 33.3 | 15.0 | 23.3 | 0    | 24.7 | 17.7 | 28.2 | 25.3 | 25.3 | 9.2  | 18.8 | 5.5  | 15.2 | 11.8 | 21.7 | 19.2 | 15.8 | 14.5 | 9.5  | 303.7 | 16.9    |
| 6.....                                | Fallow.....       | do.....                | 38.3 | 8.8  | 22.3 | 0    | 22.8 | 21.8 | 37.0 | 24.5 | 24.5 | 12.5 | 27.2 | 6.7  | 17.0 | 24.5 | 22.7 | 20.3 | 17.7 | 22.3 | 21.0 | 374.8 | 20.8    |
| 7.....                                | do.....           | do.....                | 40.7 | 8.2  | 26.2 | 0    | 22.8 | 20.7 | 33.5 | 23.5 | 23.5 | 13.0 | 22.7 | 1.3  | 18.5 | 17.8 | 19.2 | 20.3 | 23.0 | 15.8 | 11.5 | 337.8 | 18.8    |
| 8.....                                | Oats.....         | do.....                | 31.7 | 10.0 | 20.8 | 0    | 23.5 | 16.7 | 25.8 | 20   | 20   | 8.5  | 15.0 | 3.0  | 13.5 | 18.0 | 19.3 | 21.5 | 17.5 | 14.7 | 15.8 | 302.9 | 16.8    |
| 9.....                                | do.....           | do.....                | 36.8 | 11.7 | 21.3 | 0    | 23.5 | 16.7 | 25.8 | 20   | 20   | 8.5  | 15.0 | 3.0  | 13.5 | 18.0 | 19.3 | 21.5 | 17.5 | 14.7 | 15.8 | 302.9 | 16.8    |
| 10.....                               | Corn.....         | do.....                | 33.0 | 7.7  | 27.0 | 0    | 19.2 | 22.8 | 32.3 | 27.8 | 27.8 | 12.2 | 22.3 | 3.5  | 13.5 | 22.5 | 23.3 | 29.2 | 23.3 | 16.2 | 17.0 | 238.1 | 14.3    |
| 11.....                               | do.....           | do.....                | 31.0 | 9.4  | 21.0 | 0    | 19.2 | 22.8 | 32.3 | 27.8 | 27.8 | 12.2 | 22.3 | 3.5  | 13.5 | 22.5 | 23.3 | 29.2 | 23.3 | 16.2 | 17.0 | 238.1 | 14.3    |
| 12.....                               | do.....           | do.....                | 38.7 | 13.2 | 21.0 | 0    | 28.7 | 19.5 | 37.0 | 31.7 | 31.7 | 12.8 | 23.3 | 3.5  | 13.5 | 22.5 | 23.3 | 29.2 | 23.3 | 16.2 | 17.0 | 238.1 | 14.3    |
| 13.....                               | do.....           | do.....                | 34.0 | 9.1  | 19.0 | 0    | 28.7 | 19.5 | 37.0 | 31.7 | 31.7 | 12.8 | 23.3 | 3.5  | 13.5 | 22.5 | 23.3 | 29.2 | 23.3 | 16.2 | 17.0 | 238.1 | 14.3    |
| 14.....                               | do.....           | do.....                | 32.7 | 13.8 | 23.0 | 0    | 26.7 | 19.2 | 37.0 | 32.7 | 32.7 | 10.8 | 23.0 | 3.8  | 14.2 | 19.2 | 21.0 | 21.0 | 21.0 | 15.5 | 11.0 | 308.8 | 17.2    |
| 15.....                               | Corn.....         | do.....                | 23.3 | 11.1 | 20.5 | 0    | 20.5 | 18.5 | 31.7 | 24.9 | 24.9 | 6.5  | 17.8 | 3.8  | 14.2 | 19.2 | 21.0 | 21.0 | 21.0 | 15.5 | 11.0 | 308.8 | 17.2    |
| 16.....                               | Pear.....         | do.....                | 29.3 | 9.8  | 22.8 | 0    | 23.8 | 18.7 | 31.3 | 26.7 | 26.7 | 7.8  | 18.5 | 3.2  | 17.5 | 19.0 | 23.0 | 23.0 | 23.0 | 15.5 | 11.0 | 308.8 | 17.2    |
| 17.....                               | Fallow.....       | do.....                | 31.3 | 7.0  | 23.3 | 0    | 0    | 9.7  | 31.3 | 0    | 0    | 8.8  | 18.7 | 4.8  | 12.7 | 17.7 | 20.7 | 27.3 | 27.3 | 17.3 | 14.5 | 337.4 | 18.2    |
| 18.....                               | do.....           | do.....                | 38.7 | 10.3 | 23.3 | 0    | 16.3 | 19.7 | 31.0 | 18.3 | 18.3 | 2.0  | 23.7 | 4.8  | 12.7 | 17.7 | 20.7 | 27.3 | 27.3 | 17.3 | 14.5 | 337.4 | 18.2    |
| 19.....                               | do.....           | do.....                | 31.7 | 11.3 | 20.5 | 0    | 23.5 | 17.7 | 34.2 | 22.5 | 22.5 | 8.3  | 18.3 | 1.5  | 14.3 | 22.3 | 22.3 | 22.3 | 22.3 | 15.5 | 11.0 | 331.6 | 18.3    |
| 40.....                               | do.....           | do.....                | 35.7 | 7.4  | 23.8 | 0    | 24.0 | 17.0 | 32.8 | 23.7 | 23.7 | 9.2  | 18.0 | 2.8  | 15.2 | 21.3 | 21.3 | 21.3 | 21.3 | 18.2 | 11.0 | 312.7 | 17.4    |
| 49.....                               | do.....           | do.....                | 35.7 | 7.4  | 23.8 | 0    | 24.0 | 17.0 | 32.8 | 23.7 | 23.7 | 9.2  | 18.0 | 2.8  | 15.2 | 21.3 | 21.3 | 21.3 | 21.3 | 18.2 | 11.0 | 312.7 | 17.4    |
| 67.....                               | Oats.....         | do.....                | 10.0 | 21.5 | 0    | 0    | 26.7 | 19.7 | 39.7 | 21.5 | 21.5 | 12.3 | 25.0 | 3.0  | 17.0 | 34.0 | 22.3 | 22.3 | 22.3 | 21.5 | 18.0 | 335.8 | 20.4    |
| 68.....                               | Corn.....         | do.....                | 10.7 | 18.7 | 0    | 0    | 30.0 | 17.0 | 39.8 | 20.3 | 20.3 | 8.0  | 25.5 | 7.2  | 13.3 | 38.0 | 20.8 | 20.8 | 20.8 | 21.2 | 18.5 | 335.8 | 20.4    |
| 305.....                              | Fallow.....       | do.....                |      |      |      |      | 23.3 | 18.2 | 36.3 | 24.3 | 24.3 | 9.0  | 24.3 | 5.8  | 14.0 | 28.7 | 20.7 | 29.0 | 21.3 | 21.2 | 18.3 | 312.7 | 19.5    |
| Average.....                          |                   |                        | 33.8 | 10.5 | 22.6 | 0    | 20.9 | 16.9 | 32.7 | 21.0 | 21.0 | 8.8  | 20.9 | 3.6  | 15.2 | 20.6 | 22.2 | 25.4 | 20.7 | 18.3 | 15.7 | 324.0 | 18.3    |

<sup>1</sup> Winterkilled.<sup>2</sup> All winter-wheat plots on field A were damaged heavily by hail in 1923.<sup>3</sup> Interpolated.

**CROP YIELDS AT THE MOCCASIN (MONT.) FIELD STATION—Continued**  
 TABLE 53.—Annual acre yields of specified crops grown in rotations on individual plots at Moccasin, Mont., in one or more years from 1908 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method     | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|---------------------------------------|---------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| SPRING WHEAT—con.                     |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| E.....                                | Wheat         | Subsoiled.....     | 36.7 | 15.0 | 23.5 | 0    | 22.8 | 16.5 | 25.5 | 20.0 | 10.0 | 10.0 | 11.2 | 5.5  | 17.8 | 11.5 | 14.8 | 13.2 | 5.7  | 7.0  | 8.8  | 260.5 | 14.5    |
| F.....                                | do            | Fall listed.....   | 33.3 | 8.3  | 26.5 | 0    | 23.3 | 17.2 | 27.7 | 18.2 | 5.5  | 12.8 | 11.0 | 1.0  | 11.2 | 13.5 | 11.5 | 9.8  | 0    | 6.3  | 9.3  | 235.3 | 13.1    |
| G.....                                | do            | Spring plowed..... | 37.3 | 7.7  | 26.0 | 0    | 27.2 | 17.3 | 31.2 | 18.3 | 10.7 | 13.3 | 1.5  | 1.5  | 17.0 | 20.7 | 17.7 | 10.2 | 5    | 4.7  | 14.7 | 276.9 | 15.3    |
| Average.....                          |               |                    | 35.8 | 10.3 | 25.3 | 0    | 24.4 | 17.0 | 28.1 | 18.8 | 8.7  | 12.4 | 1.0  | 1.0  | 15.3 | 15.2 | 14.6 | 11.1 | 2.1  | 6.0  | 19.9 | 257.3 | 14.3    |
| Field B:<br>247.....                  |               | Flax.....          |      |      |      |      |      | 20.7 | 36.7 | 24.0 | 12.3 | 20.2 |      | 1.7  | 10.5 | 21.2 | 24.8 | 22.7 | 22.0 | 12.7 | 20.5 | 238.3 | 19.9    |
| Average.....                          |               |                    |      |      |      |      |      |      | 36.7 | 24.0 | 12.3 | 20.2 |      | 1.7  | 19.5 | 21.2 | 21.8 | 22.7 | 22.0 | 12.7 | 20.5 | 238.3 | 19.9    |
| OATS                                  |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Field A:                              |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Oats          | Spring plowed..... | 75.3 | 24.4 | 52.2 | 4.0  | 64.1 | 44.7 | 51.1 | 43.1 | 13.4 | 40.6 | 4.1  | 4.1  | 39.4 | 31.0 | 42.8 | 39.4 | 6.0  | 28.8 | 41.3 | 634.6 | 35.8    |
| B.....                                | do            | Fall plowed.....   | 66.3 | 20.0 | 51.6 | 0    | 65.0 | 49.4 | 50.0 | 45.6 | 14.1 | 36.6 | 2.2  | 2.2  | 27.5 | 18.8 | 30.4 | 33.1 | 4.7  | 24.4 | 31.3 | 581.5 | 32.3    |
| Average.....                          |               |                    | 70.8 | 22.7 | 51.9 | 0    | 64.6 | 47.1 | 52.4 | 44.4 | 13.8 | 38.6 | 3.2  | 3.2  | 33.5 | 25.4 | 41.1 | 36.3 | 4.9  | 26.6 | 36.3 | 613.1 | 34.1    |
| C or D.....                           |               | Fallow.....        | 78.8 | 25.9 | 65.9 | 0    | 78.4 | 61.6 | 82.8 | 65.6 | 22.2 | 54.1 | 8.8  | 8.8  | 35.0 | 36.6 | 58.4 | 52.5 | 12.2 | 55.9 | 52.8 | 818.4 | 47.1    |
| 1.....                                | Wheat         | Fall plowed.....   | 68.1 | 21.3 | 50.6 | 0    | 57.8 | 51.3 | 63.1 | 45.6 | 16.9 | 30.6 | 0    | 0    | 28.4 | 9.1  | 37.8 | 46.6 | 29.7 | 28.1 | 25.9 | 610.9 | 33.9    |
| 2.....                                | do            | Spring plowed..... | 63.1 | 25.3 | 51.0 | 0    | 54.4 | 45.3 | 67.2 | 47.2 | 12.5 | 40.6 | 4.7  | 4.7  | 30.0 | 40.6 | 40.6 | 41.4 | 6.3  | 33.8 | 47.2 | 650.8 | 36.7    |
| 3.....                                | do            | Fall plowed.....   | 61.6 | 17.7 | 49.7 | 0    | 55.6 | 56.3 | 65.0 | 41.4 | 16.3 | 29.7 | 0    | 0    | 33.0 | 36.6 | 37.2 | 47.2 | 29.4 | 40.6 | 27.5 | 616.3 | 34.2    |
| 4.....                                | Corn          | Disked.....        | 74.4 | 20.6 | 57.2 | 0    | 76.9 | 55.6 | 80.3 | 50.0 | 19.7 | 43.8 | 5.0  | 5.0  | 30.0 | 30.0 | 45.0 | 45.0 | 7.2  | 40.6 | 38.8 | 733.9 | 40.8    |
| 5.....                                | Wheat         | Fall plowed.....   | 67.2 | 25.0 | 46.9 | 0    | 61.9 | 50.9 | 67.8 | 46.3 | 15.3 | 35.3 | 1.6  | 1.6  | 29.1 | 18.3 | 45.0 | 44.1 | 5.0  | 28.1 | 33.1 | 615.1 | 34.2    |
| 6.....                                | Barley        | do.....            | 57.8 | 10.4 | 53.8 | 0    | 64.4 | 54.1 | 65.6 | 50.0 | 29.3 | 36.6 | 0    | 0    | 34.7 | 18.3 | 45.0 | 44.1 | 4.4  | 25.3 | 27.5 | 611.8 | 34.9    |
| 7.....                                | Corn          | Spring plowed..... | 74.1 | 24.1 | 52.5 | 0    | 65.0 | 50.6 | 74.7 | 48.1 | 14.1 | 40.9 | 5.6  | 5.6  | 25.6 | 31.6 | 45.6 | 48.1 | 10.6 | 41.0 | 45.3 | 688.1 | 38.2    |
| 8.....                                | Fallow        | Fallow.....        | 66.3 | 20.6 | 70.0 | 0    | 85.3 | 64.7 | 85.0 | 70.6 | 25.9 | 48.1 | 9.4  | 9.4  | 42.2 | 47.2 | 56.6 | 66.9 | 10.6 | 64.1 | 55.3 | 888.2 | 49.3    |
| 9.....                                | Bromegrass    | Spring plowed..... | 70.7 | 22.2 | 56.6 | 0    | 61.3 | 47.8 | 75.3 | 43.1 | 17.2 | 41.6 | 5.9  | 5.9  | 28.4 | 22.2 | 47.2 | 46.9 | 9.7  | 39.4 | 32.5 | 868.3 | 37.1    |
| 10.....                               | Fall plowed   | Fall plowed.....   | 62.5 | 13.8 | 21.9 | 0    | 38.8 | 26.3 | 41.5 | 22.5 | 3.1  | 16.6 | 0    | 0    | 35.0 | 13.1 | 51.6 | 15.3 | 26.3 | 19.4 | 39.7 | 447.4 | 24.9    |
| 11.....                               | Clover        | do.....            | 72.5 | 22.8 | 37.8 | 0    | 50.3 | 46.6 | 74.4 | 35.9 | 14.1 | 35.9 | 0    | 0    | 37.2 | 15.3 | 40.9 | 53.4 | 33.6 | 21.1 | 36.3 | 637.1 | 35.4    |
| 12.....                               | do            | do.....            | 63.8 | 19.5 | 45.7 | 0    | 33.8 | 26.3 | 41.5 | 22.5 | 3.1  | 16.6 | 0    | 0    | 30.3 | 11.0 | 46.3 | 39.7 | 41.3 | 30.3 | 26.3 | 553.9 | 30.8    |
| 13.....                               | Flax          | Green manured..... | 69.7 | 30.9 | 59.4 | 0    | 65.9 | 59.7 | 82.8 | 51.6 | 16.9 | 48.1 | 9.1  | 9.1  | 33.1 | 15.0 | 46.3 | 48.4 | 10.9 | 51.3 | 34.1 | 742.7 | 41.3    |
| 14.....                               | Winter rye    | Disked.....        | 55.9 | 20.0 | 60.6 | 0    | 70.0 | 50.3 | 80.6 | 55.0 | 15.0 | 39.1 | 8.4  | 8.4  | 32.1 | 10.0 | 47.8 | 50.6 | 41.6 | 39.7 | 37.2 | 705.2 | 39.2    |
| 15.....                               | Corn          | Green manured..... | 60.1 | 19.5 | 53.9 | 0    | 71.3 | 53.1 | 83.8 | 58.1 | 16.9 | 39.1 | 6.3  | 6.3  | 31.3 | 14.4 | 53.1 | 55.3 | 49.4 | 38.4 | 29.1 | 737.0 | 40.0    |
| 16.....                               | Peas          | Green manured..... | 67.7 | 26.3 | 48.4 | 0    | 70.3 | 52.2 | 76.3 | 61.3 | 16.9 | 44.7 | 3.4  | 3.4  | 31.3 | 10.0 | 52.5 | 61.3 | 41.6 | 43.4 | 37.5 | 750.1 | 41.7    |
| 17.....                               | Corn          | Disked.....        | 51.6 | 30.0 | 56.7 | 0    | 74.1 | 63.8 | 72.5 | 56.3 | 19.1 | 46.9 | 3.8  | 3.8  | 32.3 | 11.3 | 54.1 | 47.5 | 47.2 | 43.8 | 37.8 | 748.7 | 41.6    |
| 18.....                               | do            | do.....            | 66.6 | 24.4 | 53.8 | 0    | 65.0 | 50.0 | 76.0 | 48.1 | 17.2 | 36.3 | 7.2  | 7.2  | 30.6 | 17.2 | 49.4 | 62.5 | 13.1 | 54.7 | 45.3 | 718.3 | 39.9    |
| 19.....                               | Fallow        | Fallow.....        | 62.5 | 21.9 | 23.2 | 0    | 38.4 | 16.0 | 25.6 | 24.7 | 6.9  | 30.3 | 8.4  | 8.4  | 32.8 | 35.6 | 50.9 | 47.2 | 5.9  | 43.4 | 41.6 | 752.1 | 41.8    |
| 20.....                               | Corn          | Disked.....        | 62.5 | 21.9 | 23.2 | 0    | 30.6 | 47.2 | 41.0 | 29.4 | 14.4 | 31.3 | 0    | 0    | 33.1 | 3.4  | 47.2 | 42.2 | 27.2 | 23.8 | 23.1 | 446.4 | 24.8    |
| 21.....                               | Alfalfa       | Fall plowed.....   | 56.9 | 14.4 | 33.1 | 0    | 30.6 | 47.2 | 41.0 | 29.4 | 14.4 | 31.3 | 0    | 0    | 33.1 | 3.4  | 47.2 | 42.2 | 10.6 | 21.6 | 11.3 | 471.8 | 26.2    |
| 22.....                               | do            | do.....            | 62.8 | 18.1 | 54.4 | 0    | 99.7 | 49.1 | 88.8 | 59.4 | 20.0 | 50.9 | 8.8  | 8.8  | 31.9 | 48.8 | 49.7 | 50.0 | 10.0 | 55.3 | 42.5 | 783.3 | 43.5    |
| 23.....                               | Green manured | do.....            | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 24.....                               | do            | do.....            | 73.4 | 22.5 | 50.2 | 0    | 70.4 | 40.3 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 25.....                               | Peas          | Green manured..... | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 26.....                               | Winter wheat  | Fall plowed.....   | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 27.....                               | Corn          | Disked.....        | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 28.....                               | Wheat         | Fall plowed.....   | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 29.....                               | do            | do.....            | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| 30.....                               | do            | do.....            | 66.9 | 21.4 | 54.2 | 0    | 75.6 | 49.1 | 88.8 | 60.3 | 17.2 | 46.3 | 8.4  | 8.4  | 27.5 | 52.5 | 55.3 | 54.7 | 6.9  | 47.8 | 39.4 | 770.9 | 42.8    |
| Average.....                          |               |                    | 65.6 | 21.9 | 50.8 | 0    | 63.9 | 49.9 | 72.5 | 48.1 | 16.5 | 39.8 | 4.1  | 4.1  | 32.9 | 23.7 | 47.1 | 48.3 | 18.0 | 37.4 | 34.7 | 659.9 | 37.4    |
| Field B:                              |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| F.....                                | Oats          | Subsoiled.....     | 63.8 | 25.3 | 53.1 | 0    | 65.0 | 40.6 | 57.2 | 43.1 | 15.6 | 33.4 | 1.9  | 1.9  | 23.8 | 13.8 | 35.9 | 32.2 | 3.4  | 26.9 | 21.9 | 550.9 | 30.9    |
| F.....                                | do            | Fall listed.....   | 72.5 | 22.8 | 53.6 | 0    | 63.4 | 37.5 | 56.3 | 37.8 | 10.9 | 31.6 | 2.5  | 2.5  | 23.4 | 9.7  | 23.8 | 23.8 | 3.8  | 29.4 | 26.6 | 533.1 | 29.6    |
| Average.....                          |               |                    | 68.2 | 24.1 | 53.4 | 0    | 64.2 | 39.1 | 56.8 | 40.5 | 13.3 | 32.5 | 2.2  | 2.2  | 23.6 | 11.8 | 31.7 | 28.0 | 3.6  | 28.2 | 21.3 | 545.0 | 30.3    |
| Field B:                              |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 77.....                               | Potatoes      | Disked.....        |      |      |      |      |      |      |      |      |      |      |      | 5.0  | 31.6 | 34.1 | 50.3 | 48.4 | 10.6 | 48.8 | 36.9 | 260.7 | 37.2    |
| 114.....                              | Winter rye    | Green manured..... |      |      |      |      |      | 40.6 | 40.7 | 50.1 | 40.9 | 13.8 | 32.2 | 6.9  | 19.4 | 13.1 | 45.9 | 53.4 | 7.97 | 38.4 | 36.9 | 469.2 | 35.4    |
| 115.....                              | Corn          | Disked.....        |      |      |      |      |      | 49.1 | 51.9 | 69.7 | 55.6 | 11.9 | 38.7 | 6.3  | 23.7 | 30.3 | 46.6 | 46.6 | 26.0 | 45.9 | 46.6 | 507.6 | 39.0    |
| 116.....                              | Peas          | Green manured..... |      |      |      |      |      | 57.5 | 57.8 | 70.3 | 55.6 | 12.5 | 39.1 | 7.6  | 23.7 | 30.3 | 47.8 | 47.8 | 31.3 | 31.6 | 33.8 | 593.9 | 38.8    |
| 117.....                              | Corn          | Disked.....        |      |      |      |      |      | 56.6 | 41.6 | 70.3 | 40.4 | 15.6 | 36.9 | 4.1  | 4.1  | 22.8 | 34.1 | 42.8 | 28.1 | 41.6 | 42.8 |       |         |



| CORN TOTAL |               |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------|---------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Field A:   | Corn          | 10,100 | 2,760 | 7,250 | 5,250 | 4,900 | 7,700 | 5,400 | 4,600 | 8,000 | 2,900 | 6,480 | 4,550 | 2,500 | 6,850 | 4,400 | 5,400 |
|            | do.           | 11,120 | 2,900 | 7,000 | 2,350 | 4,000 | 3,700 | 6,450 | 6,200 | 7,200 | 2,400 | 5,900 | 4,450 | 3,900 | 6,950 | 5,000 | 5,400 |
|            | Average       | 10,610 | 2,830 | 7,125 | 1,300 | 4,500 | 4,300 | 8,075 | 5,800 | 4,450 | 2,650 | 6,190 | 4,500 | 3,200 | 6,900 | 4,700 | 5,400 |
| G or D:    | Fallow        | 11,530 | 3,300 | 3,850 | 1,100 | 6,100 | 3,500 | 6,700 | 4,800 | 6,200 | 3,000 | 5,200 | 3,300 | 4,000 | 7,050 | 4,350 | 5,650 |
|            | Oats          | 10,200 | 2,600 | 4,550 | 3,700 | 2,900 | 4,400 | 6,900 | 4,900 | 7,100 | 1,500 | 5,750 | 3,950 | 3,300 | 5,850 | 4,350 | 5,250 |
|            | do.           | 10,200 | 2,600 | 4,550 | 3,700 | 2,900 | 4,400 | 6,900 | 4,900 | 7,100 | 1,500 | 5,750 | 3,950 | 3,300 | 5,850 | 4,350 | 5,250 |
| Field B:   | Spring plowed | 2,485  | 2,900 | 6,500 | 2,800 | 4,700 | 6,800 | 3,800 | 2,600 | 7,000 | 1,400 | 4,800 | 4,450 | 4,350 | 5,300 | 4,300 | 5,400 |
|            | Fall plowed   | 2,380  | 2,900 | 6,500 | 2,800 | 4,700 | 6,800 | 3,800 | 2,600 | 7,000 | 1,400 | 4,800 | 4,450 | 4,350 | 5,300 | 4,300 | 5,400 |
|            | do.           | 2,650  | 2,900 | 6,500 | 2,800 | 4,700 | 6,800 | 3,800 | 2,600 | 7,000 | 1,400 | 4,800 | 4,450 | 4,350 | 5,300 | 4,300 | 5,400 |
| Average    | Wheat         | 8,800  | 2,070 | 6,250 | 3,050 | 4,600 | 6,400 | 5,200 | 4,200 | 6,200 | 400   | 5,300 | 4,100 | 3,950 | 5,300 | 3,800 | 5,400 |
|            | Oats          | 10,400 | 2,900 | 4,100 | 2,200 | 2,700 | 6,700 | 6,700 | 6,200 | 7,200 | 700   | 6,650 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
|            | Barley        | 8,900  | 2,300 | 3,200 | 3,400 | 2,900 | 5,800 | 3,800 | 3,100 | 7,200 | 900   | 6,650 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
| G or D:    | Wheat         | 8,100  | 2,300 | 3,700 | 3,400 | 2,900 | 5,800 | 3,800 | 3,100 | 7,200 | 900   | 6,650 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
|            | Oats          | 7,300  | 2,200 | 3,300 | 3,300 | 1,650 | 3,600 | 3,300 | 2,400 | 7,200 | 800   | 6,400 | 4,550 | 4,850 | 7,420 | 4,100 | 5,300 |
|            | do.           | 10,300 | 2,580 | 3,350 | 3,700 | 3,600 | 5,000 | 4,900 | 4,300 | 7,200 | 1,000 | 5,800 | 4,800 | 1,100 | 7,250 | 3,850 | 5,400 |
| Field A:   | Wheat         | 8,400  | 2,400 | 4,900 | 2,550 | 4,100 | 4,800 | 3,800 | 3,400 | 7,300 | 1,000 | 5,800 | 4,800 | 1,100 | 7,250 | 3,850 | 5,400 |
|            | Oats          | 8,300  | 2,400 | 6,350 | 3,700 | 3,600 | 5,000 | 4,900 | 4,300 | 7,200 | 1,000 | 5,800 | 4,800 | 1,100 | 7,250 | 3,850 | 5,400 |
|            | do.           | 9,000  | 2,650 | 7,280 | 3,450 | 4,600 | 4,100 | 5,800 | 4,800 | 7,300 | 800   | 6,500 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
| Field B:   | Wheat         | 9,300  | 2,500 | 6,250 | 3,900 | 4,800 | 7,100 | 4,500 | 3,900 | 6,900 | 800   | 6,500 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
|            | Oats          | 10,200 | 2,900 | 7,250 | 1,450 | 4,500 | 4,300 | 6,900 | 4,200 | 7,200 | 700   | 6,650 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
|            | do.           | 8,650  | 2,900 | 4,450 | 3,500 | 2,200 | 4,300 | 3,800 | 1,300 | 7,200 | 400   | 6,300 | 4,100 | 3,700 | 6,250 | 4,350 | 5,400 |
| Average    | Spring plowed | 9,150  | 2,600 | 4,850 | 3,400 | 4,100 | 6,400 | 4,100 | 2,500 | 8,800 | 400   | 6,300 | 4,100 | 3,700 | 6,250 | 4,350 | 5,400 |
|            | Fall plowed   | 9,700  | 2,100 | 7,250 | 3,400 | 2,200 | 3,300 | 3,400 | 1,100 | 2,500 | 800   | 6,500 | 4,100 | 3,700 | 6,250 | 4,350 | 5,400 |
|            | do.           | 9,200  | 2,800 | 7,000 | 3,650 | 3,150 | 4,700 | 5,200 | 7,100 | 2,500 | 6,000 | 6,500 | 4,200 | 2,250 | 6,500 | 4,200 | 5,400 |
| Field A:   | Wheat         | 10,700 | 2,900 | 6,800 | 3,050 | 4,700 | 4,400 | 4,800 | 3,700 | 6,200 | 200   | 5,000 | 4,950 | 3,850 | 5,550 | 2,700 | 1,900 |
|            | do.           | 2,600  | 2,900 | 6,800 | 3,050 | 4,700 | 4,400 | 4,800 | 3,700 | 6,200 | 200   | 5,000 | 4,950 | 3,850 | 5,550 | 2,700 | 1,900 |
|            | Oats          | 2,600  | 2,900 | 6,800 | 3,050 | 4,700 | 4,400 | 4,800 | 3,700 | 6,200 | 200   | 5,000 | 4,950 | 3,850 | 5,550 | 2,700 | 1,900 |
| Field B:   | Wheat         | 9,150  | 2,520 | 5,994 | 2,682 | 4,080 | 4,374 | 5,828 | 4,236 | 7,040 | 684   | 5,066 | 4,364 | 4,036 | 6,693 | 3,880 | 2,288 |
|            | do.           | 11,420 | 3,650 | 4,780 | 700   | 5,800 | 5,000 | 8,000 | 6,200 | 4,309 | 1,500 | 6,000 | 4,500 | 4,700 | 5,000 | 4,550 | 2,800 |
|            | do.           | 11,700 | 3,260 | 6,700 | 350   | 4,450 | 3,800 | 7,200 | 4,400 | 3,800 | 1,800 | 5,050 | 3,950 | 4,200 | 4,200 | 4,200 | 4,800 |
| Average    | Spring listed | 7,800  | 2,550 | 0     | 400   | 4,550 | 3,600 | 6,700 | 4,200 | 3,400 | 1,600 | 3,750 | 3,250 | 3,250 | 4,800 | 2,800 | 2,610 |
|            | Spring listed | 10,307 | 3,153 | 3,827 | 483   | 4,933 | 4,133 | 7,300 | 4,933 | 3,833 | 1,633 | 4,933 | 3,900 | 3,950 | 5,483 | 3,850 | 2,787 |
|            | do.           | 10,307 | 3,153 | 3,827 | 483   | 4,933 | 4,133 | 7,300 | 4,933 | 3,833 | 1,633 | 4,933 | 3,900 | 3,950 | 5,483 | 3,850 | 2,787 |
| Field B:   | Winter wheat  | 51     | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | Barley        | 53     | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | 54     | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
| Field A:   | Winter wheat  | 57     | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | 85     | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | Oats          | 111    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
| Field B:   | Winter wheat  | 115    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | 116    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | Wheat         | 117    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
| Field A:   | Flax          | 118    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | 244    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | Spring plowed | 245    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
| Average    | do.           | 246    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | ---    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
|            | do.           | ---    | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   | ---   |
| Field A:   | Barley        | 4.7    | 45.2  | 10.0  | 24.0  | 10.0  | 21.9  | 11.7  | 34.4  | 24.0  | 3.3   | 25.0  | 2.9   | 15.2  | 25.2  | 30.2  | 14.2  |
|            | do.           | 3.9    | 43.3  | 12.5  | 24.2  | 0     | 21.9  | 18.1  | 30.0  | 25.6  | 5.2   | 24.0  | 1.5   | 13.1  | 16.3  | 27.7  | 16.0  |
|            | Average       | ---    | 44.3  | 11.3  | 24.1  | 0     | 21.9  | 14.9  | 32.2  | 24.8  | 4.3   | 24.5  | 2.2   | 14.2  | 20.8  | 29.0  | 15.1  |

4 Oat crop in 1912 destroyed by hail.  
5 Oat crop on all plots of field A was damaged by hail in 1921, and the injury to the different plots was so variable that many of the yields are not comparable.  
6 All but 11 plots of oats in field A in 1924 were injured from 75 to 90 per cent by hail. Oats on rotations 1, 3, 4, 10, 11, 12, 15, 16, 17, 41, and 42 were harvested before the hail.  
7 Oat crop in 1921 in field B damaged by hail, but the injury to the various plots was uniform.  
8 Yields of corn in field A were obtained in 1912, but the stand was so uneven and the damage by hail so ununiform that many of the yields are not comparable.  
9 Plots badly damaged by grasshoppers.  
10 Barley crop on field A destroyed by hail in 1912.  
11 Barley on field A damaged by hail in 1926, and the yields are not wholly reliable, as the extent of injury to the different plots varied from 30 to 80 per cent.



## CROP YIELDS AT THE MOCCASIN (MONT.) FIELD STATION—Continued

TABLE 53.—Annual acre yields of specified crops grown in rotations on individual plots at Moccasin, Mont., in one or more years from 1908 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop   | Tillage method     | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926   | Total  | Average |
|---------------------------------------|-----------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|---------|
| BARLEY—continued.                     |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| Field A—Continued.                    |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 6.....                                | Fallow.....     | Fallowed.....      | 49.4  | 15.8  | 27.5  | 0     | 32.7  | 25.8  | 46.5  | 34.4  | 8.3   | 36.0  | 6.3   | 20.6  | 35.8  | 45.2  | 30.8  | 24.6  | 34.6  | 17.9  | 501.2  | 27.8   |         |
| 7.....                                | Corn.....       | Disks.....         | 42.7  | 16.6  | 29.8  | 0     | 34.6  | 21.7  | 46.5  | 32.9  | 6.5   | 28.1  | 4.8   | 11.5  | 28.3  | 35.0  | 25.6  | 14.6  | 27.1  | 27.1  | 6.3    | 412.6  | 22.9    |
| Average.....                          | Oats.....       | Spring plowed..... | 39.2  | 11.7  | (1)   | 0     | 31.7  | 21.3  | 42.5  | 27.3  | 3.8   | 26.0  | 4.6   | 13.1  | 29.4  | 33.3  | 32.1  | 17.5  | 21.5  | 7.3   | 362.3  | 21.3   |         |
|                                       | .....           | .....              | 41.0  | 14.2  | 14.9  | 0     | 33.2  | 21.5  | 44.5  | 30.1  | 5.2   | 27.1  | 4.7   | 12.3  | 28.9  | 34.2  | 28.9  | 16.1  | 21.3  | 6.8   | 387.5  | 22.1   |         |
| F.....                                | Barley.....     | Subsoiled.....     | 48.3  | 15.1  | 32.6  | 0     | 32.9  | 23.5  | 32.3  | 25.6  | 5.8   | 20.0  | 1.7   | 13.5  | 13.5  | 24.2  | 19.0  | 9.4   | 12.7  | 5.4   | 331.8  | 18.6   |         |
| F.....                                | do.....         | Fall listed.....   | 47.9  | 12.5  | 30.4  | 0     | 32.5  | 21.9  | 33.1  | 33.1  | 4.2   | 20.0  | 1.0   | 14.0  | 13.3  | 24.0  | 15.0  | 14.7  | 14.0  | 6.3   | 319.3  | 17.7   |         |
| Average.....                          | .....           | .....              | 48.1  | 13.8  | 31.5  | 0     | 32.7  | 22.7  | 32.7  | 22.4  | 5.0   | 20.0  | 1.4   | 13.8  | 15.9  | 22.3  | 17.0  | 8.7   | 13.4  | 5.9   | 327.1  | 18.2   |         |
|                                       | .....           | .....              | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  |         |
| Field B:                              |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 51.....                               | Corn.....       | Disks.....         | ..... | ..... | ..... | ..... | 13    | 44.4  | 48.1  | 42.5  | 12.1  | 33.8  | 8.3   | 26.0  | 38.8  | 45.0  | 51.9  | 37.1  | 34.8  | 23.1  | 445.9  | 31.3   |         |
| 53.....                               | Winter rye..... | Green manured..... | ..... | ..... | ..... | ..... | 13    | 27.7  | 30.8  | 33.3  | 13.3  | 21.9  | 3.1   | 14.4  | 49.8  | 27.7  | 42.7  | 27.1  | 31.3  | 14.2  | 340.3  | 26.6   |         |
| 54.....                               | Peas.....       | do.....            | ..... | ..... | ..... | ..... | 27.5  | 32.9  | 40.0  | 35.8  | 7.1   | 22.7  | 2.5   | 13.3  | 29.8  | 29.6  | 44.0  | 20.2  | 21.9  | 12.9  | 321.5  | 25.0   |         |
| 57.....                               | Corn.....       | Disks.....         | ..... | ..... | ..... | ..... | 13    | 32.9  | 40.0  | 35.8  | 7.1   | 22.7  | 1.0   | 12.1  | 27.7  | 31.5  | 41.0  | 25.8  | 27.1  | 17.9  | 322.6  | 21.8   |         |
| 85.....                               | Flax.....       | do.....            | ..... | ..... | ..... | ..... | 27.5  | 31.7  | 50.0  | 57.5  | 0.3   | 25.0  | 2.7   | 10.0  | 32.1  | 28.5  | 31.9  | 24.6  | 17.2  | 31.3  | 318.9  | 26.8   |         |
| 92.....                               | Corn.....       | do.....            | ..... | ..... | ..... | ..... | 19.6  | 40.0  | 55.2  | 43.8  | 11.7  | 31.8  | 6.5   | 17.3  | 29.4  | 37.7  | 44.6  | 27.3  | 28.8  | 19.8  | 396.9  | 30.5   |         |
| Average.....                          | .....           | .....              | ..... | ..... | ..... | ..... | ..... | 34.5  | 46.0  | 41.7  | 9.6   | 27.1  | 4.0   | 15.5  | 31.6  | 33.3  | 42.7  | 28.5  | 26.9  | 19.9  | 361.2  | 28.0   |         |
|                                       | .....           | .....              | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  |         |
| FLAX                                  |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| Field A:                              |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| A.....                                | Flax.....       | Spring plowed..... | 10.2  | 17.0  | 5.6   | 14.6  | 15.0  | 14.3  | 11.4  | 19.5  | 10.7  | 3.6   | 5.0   | 1.4   | 6.1   | 10.3  | 6.8   | 7.5   | 4.5   | 3.6   | 6.4    | 136.9  | 8.2     |
| B.....                                | do.....         | Fall plowed.....   | 10.4  | 14.1  | 6.2   | 13.2  | 5.4   | 12.9  | 9.1   | 16.1  | 10.4  | 2.5   | 5.0   | 0     | 4.3   | 1.3   | 5.2   | 4.6   | 4.3   | 2.5   | 1.1    | 118.2  | 6.6     |
| Average.....                          | .....           | .....              | 15.6  | 5.0   | 13.9  | 5.2   | 13.6  | 10.3  | 17.8  | 10.6  | 10.6  | 3.2   | 5.0   | .7    | 5.2   | 3.6   | 6.0   | 6.1   | 4.4   | 3.1   | 3.8    | 132.6  | 7.1     |
|                                       | .....           | .....              | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  |         |
| C or D:                               |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 12.....                               | Fallow.....     | Fallowed.....      | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| .....                                 | Bromegrass..... | Spring plowed..... | 17.7  | 5.8   | 15.5  | 4.3   | 16.4  | 8.4   | 20.2  | 8.6   | 5.7   | 7.5   | 4.1   | 5.9   | 2.1   | 5.2   | 6.3   | 3.0   | 6.3   | 2.5   | 8.1    | 145.5  | 8.1     |
| F.....                                | do.....         | do.....            | 0.3   | 0     | 8.6   | 0     | 3.8   | 8.0   | 8.8   | 3.0   | .7    | 5.7   | 0     | 6.6   | 1.6   | 1.6   | 6.6   | 6.6   | 3.2   | 1.6   | 3.2    | 70.1   | 4.4     |
| F.....                                | Flax.....       | Subsoiled.....     | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| F.....                                | do.....         | Fall listed.....   | 15.2  | 6.5   | 14.1  | 4.9   | 13.2  | 10.7  | 17.3  | 10.4  | 4.5   | 0.1   | .7    | 3.2   | 1.4   | 2.9   | 5.7   | 1     | 3.0   | 1.8   | 125.0  | 6.9    |         |
| Average.....                          | .....           | .....              | 15.9  | 5.4   | 10.5  | 3.9   | 12.3  | 12.3  | 20.2  | 8.9   | 2.7   | 7.3   | 0     | 3.6   | 1.8   | 4.8   | 3.6   | 3.6   | 3.2   | 3.8   | 3.0    | 123.2  | 6.8     |
|                                       | .....           | .....              | 15.6  | 6.0   | 12.3  | 4.4   | 12.8  | 11.5  | 18.8  | 9.7   | 3.6   | 8.2   | .4    | 3.4   | 1.6   | 3.9   | 4.7   | 1.8   | 3.4   | 2.4   | 124.1  | 6.9    |         |
| Field B:                              |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| C or D.....                           | Fallow.....     | Fallowed.....      | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 85 <sup>30</sup> .....                | Corn.....       | Spring plowed..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 243.....                              | do.....         | do.....            | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 244.....                              | do.....         | Fall plowed.....   | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 245.....                              | do.....         | Disks.....         | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 246.....                              | do.....         | do.....            | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 247.....                              | Wheat.....      | do.....            | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| 248.....                              | Oats.....       | do.....            | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| Average.....                          | .....           | .....              | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
|                                       | .....           | .....              | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | .....  | .....  | .....   |
| BROMEGRASS                            |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 10.....                               | Wheat.....      | Disks.....         | 1,500 | 0     | 0     | 1,400 | 0     | 2,400 | 4,100 | 3,700 | 2,300 | 1,500 | 2,600 | 450   | 300   | 2,400 | 0     | 0     | 2,150 | 1,550 | 2,400  | 28,750 | 1,597   |
| .....                                 | Bromegrass..... | do.....            | 3,200 | 0     | 1,100 | 5,300 | 0     | 2,100 | 3,200 | 1,600 | 1,800 | 700   | 1,300 | 220   | 2,800 | 2,800 | 2,100 | 800   | 1,350 | 2,200 | 2,400  | 34,460 | 1,914   |
| 12.....                               | Wheat.....      | Disks.....         | 1,000 | 0     | 0     | 0     | 0     | 1,500 | 4,200 | 0     | 2,100 | 1,300 | 2,200 | 0     | 100   | 1,800 | 0     | 0     | 1,550 | 1,500 | 1,010  | 19,780 | 1,090   |
| .....                                 | Bromegrass..... | do.....            | 5,820 | 0     | 2,200 | 5,000 | 0     | 1,100 | 2,700 | 1,400 | 4,100 | 1,300 | 1,000 | 0     | 1,900 | 1,500 | 2,050 | 800   | 1,950 | 1,500 | 920    | 35,240 | 1,938   |
| 41.....                               | Wheat.....      | Disks.....         | 3,250 | 1,620 | 0     | 0     | 0     | 1,500 | 3,900 | 3,200 | 1,800 | 1,750 | 2,100 | 530   | 700   | 2,000 | 0     | 0     | 1,750 | 1,470 | 2,110  | 27,460 | 1,536   |
| .....                                 | Bromegrass..... | do.....            | 4,010 | 1,550 | 1,100 | 3,350 | 0     | 3,500 | 3,100 | 2,100 | 2,100 | 1,500 | 1,000 | 0     | 2,300 | 1,900 | 1,850 | 1,000 | 1,650 | 1,700 | 1,750  | 33,300 | 1,850   |
| Average.....                          | .....           | .....              | 3,000 | 1,420 | 2,660 | 1,850 | 3,560 | 2,400 | 1,500 | 4,100 | 730   | 1,500 | 1,800 | 0     | 2,000 | 2,400 | 2,100 | 950   | 1,550 | 1,550 | 34,270 | 1,901  |         |
|                                       | .....           | .....              | 3,116 | 656   | 1,060 | 2,414 | 1,729 | 3,571 | 1,829 | 2,614 | 1,194 | 1,571 | 1,711 | 171   | 1,420 | 2,213 | 1,157 | 507   | 1,736 | 1,697 | 1,823  | 30,466 | 1,694   |
| ALFALFA                               |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 42.....                               | Wheat.....      | Fall plowed.....   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,000 | 0     | 0     | 0     | 0     | 0      | 1,000  | 89      |
| .....                                 | Alfalfa.....    | do.....            | 3,800 | 800   | 2,200 | 2,550 | 3,750 | 3,500 | 2,400 | 2,000 | 2,600 | 2,300 | 300   | 500   | 2,000 | 2,000 | 2,450 | 1,700 | 800   | 1,150 | 37,210 | 2,067  |         |
| Average.....                          | .....           | .....              | 3,960 | 650   | 2,520 | 2,350 | 3,680 | 3,500 | 2,200 | 1,900 | 2,000 | 1,925 | 0     | 3,000 | 2,400 | 2,750 | 2,390 | 1,550 | 1,100 | 1,810 | 39,715 | 2,206  |         |
|                                       | .....           | .....              | 2,593 | 483   | 1,573 | 1,635 | 2,477 | 2,333 | 1,533 | 1,300 | 1,533 | 1,408 | 100   | 1,167 | 2,000 | 1,683 | 1,613 | 1,083 | 663   | 997   | 26,175 | 1,454  |         |





## CROP YIELDS AT THE HUNTLEY (MONT.) FIELD STATION

TABLE 54.—Annual acre yields of specified crops grown in rotations on individual plots at Huntley, Mont., in one or more years from 1912 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1912 to 1924, see Figure 8 (p. 14), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, and alfalfa, are given in pounds; all other yields are stated in bushels. Although 1913 was the first year for winter wheat, the yields marked with an asterisk (\*) in 1913 are eligible for including in averages, as they followed the proper previous crop and tillage methods in 1912. Spring wheat was used instead of winter wheat on winter-wheat plots marked with a dagger (†) in 1914, 1916, 1925, and 1926.]

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1912  | 1913  | 1914  | 1915  | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924  | 1925  | 1926  | Total | Average |      |
|-------------------------------|---------------|-------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|---------|------|
| WINTER WHEAT                  |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |       |       |       |       |         |      |
| A                             | Winter wheat  | Late fall plowed  | 143.3 | 30.8  | 12.3  | 13.3  | 11.3 | 7.5  | 0.1  | 25.0 | 2.0  | 23.3 | 8.5  | 22.7 | 15.5  | †0    | 162.3 | 12.5  |         |      |
| B                             | do            | Early fall plowed | 142.8 | 25.7  | 13.3  | 12.7  | 9.2  | 8.2  | .1   | 17.3 | 2.0  | 18.8 | 8.0  | 21.8 | 16.0  | †0    | 143.1 | 11.0  |         |      |
| Average                       |               |                   |       |       | 28.3  | 12.8  | 13.0 | 10.3 | 7.9  | .1   | 21.2 | 2.0  | 21.1 | 8.3  | 22.3  | 15.8  | †0    | 152.7 | 11.8    |      |
| C or D                        | Fallow        | Fallowed          |       | 41.7  | 46.8  | 51.7  | 25.8 | 19.2 | 28.3 | 7.3  | 30.2 | 14.3 | 27.0 | 22.8 | 32.5  | †20.2 | †4.5  | 330.6 | 25.4    |      |
| 38                            | do            | do                |       |       | †17.2 | 56.7  | 27.3 | 6.7  | 24.7 | 4.2  | 31.3 | 13.7 | 33.3 | 22.5 | 32.5  | †20.2 | †5.8  | 278.9 | 23.2    |      |
| 51                            | Winter rye    | Green manured     | 22.7  | 35.5  | 36.7  | 14.0  | 17.7 | 14.0 | .3   | 29.2 | 8.2  | 23.5 | 20.0 | 25.3 | 15.7  | †0    | 230.1 | 17.7  |         |      |
| 53                            | Corn          | Disked            | 28.3  | 32.3  | 26.7  | 15.3  | 13.7 | 12.0 | 1.0  | 30.3 | 11.7 | 29.3 | 19.2 | 30.8 | †13.3 | †1.5  | 236.1 | 18.2  |         |      |
| 54                            | do            | do                | 27.0  | 30.8  | 27.5  | 16.3  | 17.5 | 8.7  | .8   | 32.2 | 14.2 | 30.8 | 19.8 | 31.7 | †11.7 | †1.3  | 243.3 | 18.7  |         |      |
| 57                            | Fallow        | Fallowed          | 35.2  | 39.2  | 58.5  | 23.2  | 20.5 | 21.3 | 11.3 | 30.8 | 13.7 | 38.2 | 33.8 | 31.5 | †25.5 | †6.2  | 353.7 | 27.2  |         |      |
| 85                            | do            | do                |       | †13.3 | 38.3  | 7.2   | 16.8 | 20.0 | 15.0 | 28.8 | 24.7 | 41.7 | 25.5 | 32.8 | †27.3 | †24.0 | 302.1 | 25.2  |         |      |
| 92                            | Peas          | Green manured     | 31.3  | 33.7  | 40.8  | 19.5  | 20.0 | 16.0 | 4.7  | 28.5 | 10.8 | 22.5 | 25.7 | 25.8 | †18.2 | †0    | 266.2 | 20.5  |         |      |
| 114                           | Corn          | Disked            | 28.3  | 32.7  | 25.7  | 19.7  | 14.2 | 11.2 | 1.0  | 37.5 | 13.0 | 29.8 | 20.2 | 31.8 | †12.7 | †1.0  | 250.5 | 19.3  |         |      |
| 115                           | Winter rye    | Green manured     | 23.0  | 37.2  | 38.3  | 15.8  | 22.5 | 16.7 | 1.2  | 31.0 | 7.8  | 29.5 | 22.0 | 32.8 | †6.2  | †0    | 261.0 | 20.1  |         |      |
| 116                           | Corn          | Disked            | 25.2  | 30.0  | 27.5  | 17.7  | 18.5 | 9.3  | 1.7  | 37.5 | 10.5 | 31.2 | 23.5 | 31.3 | †13.2 | †1.7  | 253.6 | 19.4  |         |      |
| 117                           | Peas          | Green manured     | 42.5  | 33.3  | 36.7  | 27.3  | 27.5 | 25.5 | 11.2 | 30.3 | 21.0 | 30.2 | 29.8 | 31.7 | †23.8 | †7    | 329.0 | 25.3  |         |      |
| 118                           | Fallow        | Fallowed          | 48.2  | 36.7  | 56.8  | 35.5  | 24.7 | 23.0 | 13.3 | 34.5 | 27.5 | 31.8 | 30.8 | 39.5 | †30.8 | †5.2  | 393.1 | 30.2  |         |      |
| 568                           | do            | do                |       |       |       | †8.8  | 21.7 | 16.2 | 6.3  | 29.3 | 16.8 | 18.8 | 22.0 | 25.8 | †20.0 | †3.5  | 179.9 | 18.0  |         |      |
|                               | Winter wheat  | Disked            |       |       |       | †10.3 | 16.8 | 6.2  | .1   | 27.8 | 5.0  | 26.0 | 4.8  | 24.3 | †5.8  | †2.0  | 118.8 | 11.9  |         |      |
| 571                           | do            | do                |       |       |       | †11.0 | 15.8 | 6.0  | .1   | 27.2 | 2.3  | 27.2 | 1.5  | 21.0 | †4.7  | †1.0  | 106.8 | 10.7  |         |      |
|                               | do            | Fall plowed       |       |       |       | †4.5  | 10.8 | 4.2  | .2   | 28.8 | 2.3  | 25.0 | 5.2  | 25.0 | †3.7  | †0    | 105.2 | 10.5  |         |      |
| 572                           | do            | Disked            |       |       |       | †5.3  | 15.2 | 10.0 | .3   | 25.3 | 3.7  | 21.5 | 7.5  | 22.5 | †6.2  | †0    | 112.2 | 11.2  |         |      |
|                               | do            | Fall plowed       |       |       |       | †11.5 | 11.5 | 3.8  | .1   | 22.3 | 2.0  | 23.5 | 8.5  | 23.3 | †3.3  | †0    | 93.3  | 9.8   |         |      |
| 573                           | do            | Disked            |       |       |       | †10.0 | 13.0 | 5.5  | .1   | 21.0 | 4.2  | 25.0 | 7.3  | 23.3 | †6.2  | †0    | 105.6 | 10.6  |         |      |
|                               | do            | do                |       |       |       | †7.5  | 12.7 | 4.3  | .2   | 24.2 | 3.7  | 23.0 | 5.7  | 23.3 | †6.3  | †1.0  | 104.4 | 10.4  |         |      |
| Average                       |               |                   |       |       | 34.1  | 39.2  | 19.9 | 16.9 | 12.9 | 3.7  | 29.4 | 10.8 | 28.0 | 17.8 | 28.3  | †13.4 | †2.7  | 216.4 | 17.9    |      |
| E                             | Winter wheat  | Subsoiled         | 147.8 | 27.8  | 13.7  | 15.5  | 11.2 | 4.0  | 0    | 25.2 | 2.7  | 22.2 | 10.5 | 23.0 | †5.8  | †0    | 164.6 | 12.7  |         |      |
| F                             | do            | Fall listed       | 152.0 | 26.2  | 13.2  | 16.3  | 11.5 | 8.0  | .1   | 24.2 | 3.7  | 24.0 | 6.0  | 24.2 | †8.2  | †0    | 165.6 | 12.7  |         |      |
| Average                       |               |                   |       |       | 27.0  | 13.5  | 15.9 | 11.4 | 6.0  | .5   | 24.7 | 3.2  | 23.1 | 8.3  | 25.1  | †7.0  | †0    | 165.1 | 12.7    |      |
| H or I                        | Fallow        | Fallowed          |       |       | 18.0  | 57.0  | 14.8 | 19.5 | 17.7 | 28.7 | 31.2 | 23.2 | 27.7 | 35.3 | 31.7  | †27.3 | †5.8  | 319.9 | 26.7    |      |
| J or K                        | do            | do                |       |       | 19.0  | 60.8  | 9.2  | 31.8 | 23.7 | 30.8 | 32.0 | 30.5 | 30.7 | 36.3 | 40.2  | †25.5 | †7.0  | 358.5 | 29.9    |      |
| L or M                        | do            | do                |       |       | 17.3  | 55.3  | 12.5 | 12.3 | 16.7 | 10.0 | 38.7 | 20.8 | 26.2 | 28.5 | 30.7  | †25.0 | †7.5  | 284.2 | 23.7    |      |
| N or O                        | do            | do                |       |       | 16.7  | 52.5  | 19.0 | 14.8 | 23.3 | 11.5 | 19.8 | 16.0 | 31.3 | 29.5 | 29.2  | †25.2 | †1.2  | 274.3 | 22.9    |      |
| Average                       |               |                   |       |       | 56.4  | 13.9  | 19.6 | 20.4 | 20.3 | 30.4 | 22.6 | 20.0 | 32.4 | 33.0 | †26.0 | †5.4  | 309.2 | 25.8  |         |      |
| SPRING WHEAT                  |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |       |       |       |       |         |      |
| A                             | Wheat         | Spring plowed     | 11.0  | 16.0  | 18.3  | 24.5  | 5.8  | 7.8  | 1.5  | 0    | 8.2  | 3.0  | 20.7 | 6.3  | 26.7  | 7.0   | 0     | 145.8 | 10.4    |      |
| B                             | do            | Fall plowed       | 7.8   | 11.8  | 20.2  | 25.3  | 7.8  | 6.8  | 5.7  | 0    | 7.0  | 1.3  | 17.8 | 4.7  | 20.3  | 5.7   | 0     | 134.4 | 9.6     |      |
| Average                       |               |                   |       |       | 13.9  | 19.3  | 24.9 | 6.8  | 7.3  | 3.6  | 0    | 7.6  | 2.2  | 19.3 | 5.5   | 23.5  | 6.4   | 0     | 140.1   | 10.0 |
| C or D                        | Fallow        | Fallowed          | 7.8   | 22.7  | 19.5  | 36.5  | 13.5 | 11.3 | 18.8 | .7   | 6.8  | 17.7 | 19.3 | 10.3 | 21.8  | 10.0  | 1.5   | 210.4 | 15.1    |      |
| 1                             | Corn          | Disked            | 7.3   | 18.7  | 25.2  | 42.3  | 17.0 | 14.5 | 2.8  | .1   | 15.0 | 9.7  | 23.7 | 10.5 | 29.2  | 13.8  | 0     | 222.5 | 15.9    |      |
| 2                             | do            | Spring plowed     | 6.7   | 18.7  | 24.7  | 34.8  | 16.0 | 11.8 | 8.0  | .1   | 10.5 | 9.5  | 24.0 | 9.3  | 26.8  | 10.2  | 0     | 204.4 | 14.9    |      |
| 3                             | do            | Fall plowed       | 8.2   | 19.3  | 21.5  | 38.8  | 19.3 | 10.7 | 7.8  | .3   | 12.2 | 6.8  | 21.7 | 8.7  | 19.5  | 9.8   | 0     | 196.4 | 14.6    |      |
| 4                             | Oats          | do                | 9.3   | 15.0  | 28.3  | 28.5  | 9.7  | 11.3 | 6.7  | 0    | 15.7 | 3.0  | 24.5 | 8.8  | 29.8  | 5.3   | 0     | 186.6 | 13.3    |      |
| 5                             | Fallow        | Fallowed          | 8.2   | 28.8  | 32.5  | 50.3  | 21.7 | 16.3 | 28.0 | 2.7  | 15.7 | 19.8 | 29.5 | 23.2 | 32.0  | 28.5  | 0     | 329.0 | 23.5    |      |
| 8                             | Oats          | Fall plowed       | 7.5   | 16.7  | 27.2  | 31.8  | 13.7 | 13.5 | 10.8 | .3   | 9.8  | 2.3  | 26.7 | 7.7  | 34.5  | 5.2   | 0     | 200.2 | 14.3    |      |
| 9                             | do            | Spring plowed     | 5.8   | 14.3  | 24.8  | 20.8  | 6.3  | 9.3  | 5.3  | 0    | 11.3 | 3.5  | 26.7 | 7.3  | 33.8  | 5.5   | 0     | 158.9 | 11.4    |      |
| 13                            | Corn          | Disked            |       |       | 19.0  | 35.8  | 17.0 | 12.8 | 12.2 | .3   | 13.0 | 16.8 | 30.0 | 11.2 | 31.5  | 13.5  | 0     | 194.1 | 16.2    |      |
| 14                            | do            | do                | 7.5   | 18.8  | 26.3  | 40.8  | 15.7 | 10.8 | 7.0  | .3   | 14.5 | 11.3 | 26.2 | 11.2 | 30.0  | 17.3  | 0     | 230.2 | 16.4    |      |
| 15                            | Winter rye    | Green manured     | 6.3   | 15.0  | 26.0  | 42.0  | 18.7 | 12.2 | 27.7 | .3   | 15.3 | 7.7  | 25.2 | 14.3 | 24.3  | 10.0  | 0     | 238.7 | 17.1    |      |
| 16                            | Corn          | Disked            | 6.8   | 19.0  | 26.7  | 37.3  | 15.5 | 11.7 | 5.7  | .2   | 11.5 | 13.2 | 25.5 | 11.3 | 29.3  | 17.2  | 0     | 224.1 | 16.0    |      |
| 17                            | Peas          | Green manured     | 6.5   | 21.3  | 26.8  | 41.7  | 18.2 | 13.8 | 26.7 | 2.2  | 15.8 | 16.3 | 24.3 | 18.3 | 27.3  | 21.3  | 0     | 274.0 | 19.6    |      |
| 18                            | Fallow        | Fallowed          | 8.0   | 25.0  | 27.0  | 44.8  | 19.8 | 14.5 | 31.2 | 1.3  | 13.5 | 19.0 | 27.2 | 19.0 | 25.8  | 25.3  | 1.8   | 295.2 | 21.1    |      |
| 19                            | Corn          | Disked            | 8.2   | 17.5  | 27.2  | 40.3  | 16.3 | 12.2 | 10.2 | .3   | 12.5 | 13.2 | 26.3 | 11.5 | 30.5  | 16.2  | 0     | 234.2 | 16.7    |      |
| 31                            | do            | do                |       |       | 20.3  | 39.2  | 16.5 | 11.7 | 5.2  | .1   | 11.2 | 10.7 | 27.2 | 10.2 | 26.7  | 12.8  | 0     | 171.5 | 14.3    |      |
| 32                            | Sweet clover  | Green manured     |       |       | 20.3  | 39.0  | 11.2 | 12.2 | 13.3 | .2   | 14.8 | 11.5 | 26.3 | 16.3 | 29.2  | 6.8   | 0     | 180.8 | 15.1    |      |
| 39                            | Fallow        | Fallowed          |       |       | 18.5  | 33.8  | 13.5 | 13.0 | 26.0 | 6.8  | 9.3  | 19.7 | 25.7 | 17.2 | 28.3  | 31.5  | 3.7   | 228.5 | 19.0    |      |
| 41                            | Corn          | Disked            | 5.7   | 20.3  | 26.5  | 39.7  | 14.7 | 9.3  | 10.2 | .5   | 22.5 | 11.7 | 28.7 | 11.2 | 28.7  | 11.2  | 0     | 235.2 | 16.8    |      |
| 42                            | do            | do                | 5.0   | 15.8  | 27.8  | 38.0  | 14.0 | 10.8 | 3.2  | .1   | 10.0 | 4.8  | 22.5 | 7.5  | 26.2  | 8.8   | 0     | 189.5 | 13.5    |      |
| 49                            | do            | do                | 6.0   | 19.0  | 22.8  | 37.7  | 14.7 | 11.7 | 5.7  | .5   | 12.2 | 8.5  | 25.2 | 12.7 | 27.3  | 12.5  | 0     | 210.5 | 15.0    |      |
| 68                            | do            | do                | 8.2   | 16.5  | 29.3  | 44.2  | 13.8 | 12.7 | 4.5  | .3   | 18.3 | 3.8  | 25.2 | 9.8  | 27.8  | 13.2  | 0     | 219.4 | 15.7    |      |
| 69                            | do            | do                |       |       | 18.7  | 38.5  | 14.0 | 12.5 | 5.0  | .9   | 14.3 | 12.2 | 22.0 | 8.7  | 32.3  | 16.3  | 0     | 176.7 | 14.7    |      |
| 70                            | do            | do                |       |       | 16.0  | 30.2  | 12.2 | 7.7  | 1.7  | .2   | 8.7  | 7.0  | 20.5 | 8.2  | 30.8  | 10.0  | 0     | 140.2 | 11.7    |      |
| 247                           | Flax          | Spring plowed     |       |       | 13.5  | 25.8  | 8.3  | 16.0 | 10.2 | .1   | 14.7 | 5.7  | 29.5 | 10.2 | 25.2  | 8.5   | 0     | 154.2 | 12.9    |      |
| 569                           | Fallow        | Fallowed          |       |       |       | 19.8  | 28.3 | 24.8 | 1.3  | 12.7 | 14.7 | 21.0 | 13.7 | 21.2 | 24.0  | 5.5   | †6.2  | 167.2 | 16.7    |      |
| 570                           | Wheat         | Disked            |       |       |       | 20.2  | 5.0  | 6.0  | .1   | 9.7  | 4.2  | 21.2 | 5.8  | 38.7 | 11.7  | 0     | 102.4 | 10.2  |         |      |
| 582                           | Fallow        | Fallowed          |       |       | 16.7  | 34.8  | 21.0 | 23.3 | 34.8 | 6.8  | 17.3 | 26.2 | 30.0 | 28.2 | 36.0  | 33.7  | 38.0  | 330.1 | 27.5    |      |
|                               | do            | Disked            |       |       |       | 4.5   | 8.7  | 19.5 | .1   | 14.0 | 4.2  | 22.3 | 8.2  | 33.5 | 8.3   | 0     |       |       |         |      |



## CROP YIELDS AT THE HUNTLEY (MONT.) FIELD STATION—Continued

TABLE 54.—Annual acre yields of specified crops grown in rotations on individual plots at Huntley, Mont., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop     | Tillage method     | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919 | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| SPRING WHEAT—Con.             |                   |                    |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| E.....                        | Wheat.....        | Subsoiled.....     | 5.5   | 14.5  | 17.5  | 26.2  | 6.2   | 5.7   | 17.0  | 0    | 7.8   | 2.3   | 16.7  | 7.2   | 23.3  | 5.8   | 0     | 150.2  | 10.7    |
| F.....                        | do.....           | Fall listed.....   | 7.7   | 16.5  | 19.5  | 27.3  | 7.7   | 10.8  | 6.7   | .3   | 13.2  | 2.2   | 29.5  | 8.2   | 30.8  | 9.7   | 0     | 182.4  | 13.0    |
| Average.....                  |                   |                    |       | 15.5  | 18.5  | 26.8  | 7.0   | 8.3   | 11.9  | .2   | 10.5  | 2.3   | 23.1  | 7.7   | 27.1  | 7.8   | 0     | 166.3  | 11.9    |
| OATS                          |                   |                    |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Oats.....         | Spring plowed..... | 8.8   | 35.3  | 50.6  | 58.4  | 16.6  | 19.4  | 4.7   | 0    | 9.1   | 12.8  | 57.2  | 16.6  | 56.6  | 11.9  | 0     | 349.2  | 24.9    |
| B.....                        | do.....           | Fall plowed.....   | 10.6  | 34.1  | 48.4  | 56.9  | 17.8  | 18.8  | 32.8  | 0    | 18.8  | 6.9   | 44.7  | 11.6  | 40.6  | 7.2   | 0     | 338.6  | 24.2    |
| Average.....                  |                   |                    |       | 34.7  | 49.5  | 57.7  | 17.2  | 19.1  | 18.8  | 0    | 14.0  | 9.9   | 51.0  | 14.1  | 48.6  | 9.6   | 0     | 343.9  | 24.6    |
| C or D.....                   | Fallow.....       | Fallow.....        | 11.3  | 64.7  | 40.3  | 101.9 | 34.7  | 30.3  | 45.6  | 2.5  | 18.8  | 31.9  | 55.9  | 31.9  | 53.4  | 45.3  | 0     | 557.2  | 39.8    |
| 1.....                        | Wheat.....        | Fall plowed.....   | 7.2   | 32.2  | 52.8  | 59.4  | 22.2  | 26.6  | 14.1  | 0    | 34.4  | 7.2   | 49.4  | 19.4  | 51.3  | 8.1   | 0     | 377.1  | 26.9    |
| 2.....                        | do.....           | Spring plowed..... | 6.9   | 42.8  | 55.6  | 51.9  | 13.1  | 22.8  | 14.4  | 0    | 33.1  | 10.6  | 66.9  | 19.4  | 61.3  | 15.6  | 0     | 407.5  | 29.1    |
| 3.....                        | do.....           | Fall plowed.....   | 11.6  | 42.5  | 51.3  | 59.4  | 15.0  | 27.2  | 12.8  | 0    | 33.1  | 6.9   | 44.7  | 17.5  | 66.3  | 11.9  | 0     | 388.6  | 27.8    |
| 4.....                        | Corn.....         | Disked.....        | 12.5  | 39.4  | 58.4  | 81.3  | 29.1  | 21.3  | 10.3  | .5   | 28.8  | 31.3  | 66.6  | 25.3  | 65.6  | 22.8  | 0     | 480.7  | 34.3    |
| 5.....                        | Wheat.....        | Fall plowed.....   | 8.8   | 39.7  | 49.1  | 63.1  | 21.9  | 25.6  | 23.8  | 0    | 34.4  | 8.8   | 55.6  | 19.1  | 57.8  | 10.0  | 0     | 408.9  | 29.2    |
| 6.....                        | Barley.....       | do.....            | 9.7   | 34.1  | 52.2  | 64.1  | 25.0  | 24.8  | 17.2  | 0    | 55.3  | 9.1   | 53.8  | 17.2  | 67.2  | 8.8   | 0     | 427.8  | 30.6    |
| 7.....                        | Corn.....         | Spring plowed..... | 5.9   | 48.1  | 57.8  | 87.8  | 22.5  | 24.4  | 25.6  | 0    | 27.2  | 26.6  | 57.8  | 23.4  | 45.9  | 10.9  | 0     | 458.0  | 32.7    |
| 8.....                        | Fallow.....       | Fallow.....        | 7.8   | 55.3  | 65.3  | 97.5  | 43.4  | 25.3  | 42.5  | 3.1  | 47.5  | 42.8  | 69.7  | 48.8  | 66.3  | 54.7  | 0     | 662.2  | 47.3    |
| 9.....                        | Corn.....         | Spring plowed..... | 11.9  | 40.6  | 62.8  | 85.9  | 25.3  | 20.6  | 26.3  | 0    | 24.4  | 23.1  | 53.4  | 21.9  | 39.7  | 15.9  | 0     | 439.9  | 31.4    |
| 10.....                       | Wheat.....        | do.....            |       | 46.9  | 58.4  | 17.2  | 23.1  | 8.8   | .5    | 34.4 | 13.1  | 58.3  | 19.1  | 61.3  | 11.6  | 0     | 312.8 | 26.1   |         |
| 11.....                       | Winter rye.....   | Green manured..... | 7.8   | 46.6  | 62.2  | 95.3  | 42.8  | 25.3  | 35.0  | .2   | 37.5  | 5.3   | 58.1  | 41.9  | 64.4  | 15.6  | 0     | 530.2  | 37.9    |
| 12.....                       | Corn.....         | Disked.....        | 9.7   | 44.1  | 63.9  | 86.9  | 30.9  | 17.8  | 12.5  | .5   | 32.8  | 19.3  | 55.9  | 27.2  | 58.8  | 21.3  | 0     | 471.9  | 33.7    |
| 13.....                       | Peas.....         | Green manured..... | 7.8   | 60.9  | 61.3  | 88.8  | 32.5  | 28.1  | 57.2  | 6.3  | 31.3  | 37.8  | 36.6  | 55.3  | 50.0  | 38.1  | 0     | 579.8  | 41.4    |
| 14.....                       | Corn.....         | Disked.....        | 5.0   | 41.9  | 61.3  | 81.9  | 28.8  | 18.4  | 14.4  | .8   | 27.2  | 22.5  | 52.8  | 27.8  | 52.2  | 21.9  | 0     | 451.9  | 32.3    |
| 15.....                       | do.....           | do.....            | 10.9  | 39.4  | 60.9  | 87.2  | 32.5  | 23.1  | 10.0  | .5   | 30.9  | 20.9  | 55.9  | 27.5  | 57.8  | 23.8  | 0     | 470.4  | 33.6    |
| 16.....                       | Fallow.....       | Fallow.....        | 8.4   | 62.5  | 67.2  | 107.8 | 54.7  | 28.4  | 57.8  | .5   | 38.4  | 43.8  | 70.9  | 50.3  | 64.1  | 58.4  | 0     | 707.7  | 50.6    |
| 17.....                       | Sweet clover..... | Green manured..... |       | 41.6  | 85.3  | 30.6  | 24.1  | 8.8   | 0     | 31.3 | 44.1  | 62.2  | 56.6  | 56.3  | 16.3  | 0     | 415.6 | 34.6   |         |
| 18.....                       | Corn.....         | Disked.....        |       | 50.6  | 85.9  | 31.9  | 25.9  | 12.5  | .9    | 25.0 | 17.8  | 67.2  | 28.4  | 52.8  | 24.4  | 0     | 372.7 | 31.1   |         |
| 19.....                       | do.....           | do.....            | 8.4   | 44.4  | 60.6  | 81.3  | 28.8  | 24.1  | 11.9  | .2   | 29.4  | 17.8  | 50.3  | 27.5  | 49.4  | 17.5  | 0     | 443.2  | 31.7    |
| 20.....                       | Bromegrass.....   | Fall plowed.....   | 8.8   | 51.9  | 43.8  | 59.4  | 28.8  | 16.3  | 23.1  | 0    | 28.4  | 5.0   | 56.9  | 15.3  | 42.8  | 5.9   | 0     | 377.6  | 27.0    |
| 21.....                       | Alfalfa.....      | do.....            | 4.7   | 46.9  | 51.9  | 72.8  | 24.1  | 20.0  | 10.9  | 0    | 20.6  | 12.5  | 50.0  | 5.3   | 43.8  | 3.8   | 0     | 362.6  | 25.9    |
| 22.....                       | Wheat.....        | do.....            | 11.6  | 35.9  | 48.1  | 75.9  | 15.3  | 18.4  | 28.1  | .2   | 33.4  | 11.6  | 54.1  | 12.5  | 69.7  | 8.4   | 0     | 411.6  | 29.4    |
| 23.....                       | do.....           | do.....            |       | 52.8  | 79.4  | 66.6  | 31.6  | 90.3  | .9    | 43.8 | 9.4   | 58.1  | 9.1   | 76.6  | 7.8   | 0     | 473.6 | 39.5   |         |
| 24.....                       | do.....           | do.....            |       | 48.4  | 85.9  | 30.9  | 20.6  | 17.2  | 0     | 58.4 | 10.9  | 53.8  | 11.6  | 34.4  | 5.9   | 0     | 329.6 | 27.5   |         |
| 25.....                       | Winter rye.....   | Green manured..... | 5.0   | 45.9  | 66.6  | 99.1  | 43.8  | 25.0  | 37.2  | .3   | 30.9  | 24.4  | 47.2  | 32.8  | 55.0  | 16.3  | 0     | 524.5  | 37.5    |
| 26.....                       | Corn.....         | Disked.....        | 4.1   | 49.1  | 60.3  | 93.8  | 26.6  | 20.6  | 22.8  | 0    | 25.9  | 18.1  | 53.1  | 27.8  | 44.7  | 20.6  | 0     | 463.4  | 33.1    |
| 27.....                       | Peas.....         | Green manured..... | 5.0   | 68.1  | 62.5  | 90.6  | 35.6  | 30.3  | 39.1  | 1.9  | 27.5  | 22.5  | 50.0  | 48.4  | 58.1  | 33.8  | 0     | 568.4  | 40.6    |
| 28.....                       | Corn.....         | Disked.....        | 8.4   | 41.6  | 65.3  | 82.8  | 25.0  | 22.2  | 19.1  | 1.1  | 25.3  | 33.8  | 53.4  | 30.6  | 43.8  | 19.1  | 0     | 463.1  | 33.1    |
| 29.....                       | do.....           | do.....            | 8.1   | 50.3  | 67.2  | 94.4  | 27.8  | 20.6  | 24.7  | 1.1  | 25.3  | 30.3  | 67.2  | 34.4  | 62.5  | 24.4  | 0     | 533.2  | 38.1    |
| 30.....                       | Flax.....         | Spring plowed..... |       |       | 11.3  | 76.6  | 14.4  | 23.8  | 8.1   | 0    | 23.4  | 17.5  | 56.3  | 13.4  | 60.9  | 18.8  | 0     | 313.2  | 26.1    |
| Average.....                  |                   |                    |       | 46.0  | 58.5  | 80.7  | 29.6  | 23.5  | 24.6  | .8   | 32.6  | 20.2  | 56.4  | 27.2  | 56.0  | 19.1  | 0     | 454.3  | 33.3    |
| E.....                        | Oats.....         | Subsoiled.....     | 9.4   | 39.4  | 52.8  | 61.6  | 16.9  | 17.5  | 7.5   | 0    | 10.0  | 9.1   | 41.3  | 15.6  | 36.3  | 10.0  | 0     | 318.0  | 22.7    |
| F.....                        | do.....           | Fall listed.....   | 16.9  | 45.6  | 48.8  | 63.4  | 26.9  | 28.1  | 14.7  | 0    | 21.9  | 14.1  | 58.8  | 19.7  | 56.3  | 16.6  | 0     | 414.9  | 29.6    |
| Average.....                  |                   |                    |       | 42.5  | 50.8  | 62.5  | 21.9  | 22.8  | 11.1  | 0    | 16.0  | 11.6  | 50.1  | 17.7  | 46.3  | 13.3  | 0     | 366.5  | 26.2    |
| CORN TOTAL                    |                   |                    |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Corn.....         | Spring plowed..... | 2,450 | 2,960 | 2,880 | 4,660 | 3,260 | 3,860 | 3,440 | 230  | 3,000 | 650   | 4,100 | 2,800 | 4,300 | 1,200 | 920   | 38,260 | 2,730   |
| B.....                        | do.....           | Fall plowed.....   | 2,140 | 2,440 | 2,310 | 4,720 | 5,160 | 3,590 | 4,190 | 440  | 3,000 | 400   | 3,400 | 2,900 | 4,700 | 1,780 | 930   | 39,960 | 2,854   |
| Average.....                  |                   |                    |       | 2,700 | 2,595 | 4,690 | 4,210 | 3,725 | 3,815 | 335  | 3,000 | 525   | 3,750 | 2,850 | 4,500 | 1,490 | 925   | 39,110 | 2,792   |
| C or D.....                   | Fallow.....       | Fallow.....        | 2,370 | 3,880 | 3,290 | 5,900 | 9,550 | 6,350 | 6,980 | 850  | 2,900 | 2,400 | 4,000 | 5,900 | 4,800 | 4,030 | 1,870 | 62,650 | 4,475   |
| 1.....                        | Oats.....         | Fall plowed.....   | 2,370 | 2,870 | 2,720 | 4,860 | 4,600 | 3,430 | 4,760 | 220  | 3,700 | 210   | 3,600 | 2,800 | 5,400 | 1,030 | 710   | 40,910 | 2,922   |
| 2.....                        | do.....           | Spring plowed..... | 2,530 | 3,620 | 3,470 | 4,450 | 3,420 | 4,050 | 4,850 | 110  | 3,600 | 230   | 3,800 | 2,500 | 5,300 | 1,420 | 750   | 41,570 | 2,969   |
| 3.....                        | do.....           | Fall plowed.....   | 2,690 | 2,310 | 2,970 | 4,800 | 3,770 | 3,960 | 5,080 | 240  | 2,600 | 260   | 3,200 | 2,100 | 5,500 | 1,000 | 600   | 38,390 | 2,742   |
| 4.....                        | Wheat.....        | do.....            | 2,620 | 3,150 | 3,040 | 3,850 | 4,340 | 3,520 | 4,840 | 220  | 2,990 | 310   | 3,600 | 2,400 | 4,700 | 1,000 | 420   | 33,380 | 2,741   |
| 5.....                        | Oats.....         | do.....            | 3,170 | 2,760 | 3,100 | 4,660 | 4,040 | 3,740 | 4,990 | 400  | 3,000 | 200   | 3,500 | 2,600 | 5,100 | 860   | 440   | 39,390 | 2,814   |
| 6.....                        | Barley.....       | Spring plowed..... | 2,590 | 3,590 | 3,450 | 4,860 | 3,400 | 3,880 | 3,450 | 210  | 3,700 | 380   | 3,800 | 3,100 | 4,900 | 1,300 | 1,000 | 41,020 | 2,930   |
| 7.....                        | Wheat.....        | do.....            | 2,840 | 3,460 | 2,940 | 4,660 | 3,870 | 2,840 | 3,390 | 10   | 3,500 | 300   | 3,900 | 2,600 | 4,800 | 1,720 | 770   | 38,760 | 2,769   |
| 8.....                        | do.....           | do.....            |       |       | 3,090 | 4,780 | 3,780 | 4,640 | 4,000 | 220  | 3,500 | 400   | 3,900 | 3,600 | 5,800 | 2,570 | 1,460 | 38,650 | 3,221   |
| 9.....                        | do.....           | do.....            | 4,380 | 3,410 | 3,430 | 4,580 | 3,370 | 4,780 | 4,180 | 320  | 3,800 | 300   | 3,900 | 3,100 | 6,200 | 1,810 | 1,220 | 44,400 | 3,171   |
| 10.....                       | Wheat.....        | do.....            | 3,920 | 3,550 | 2,830 | 4,720 | 3,290 | 3,550 | 3,620 | 220  | 3,000 | 200   | 5,500 | 3,500 | 5,800 | 1,670 | 650   | 42,100 | 3,007   |
| 11.....                       | Oats.....         | do.....            | 3,090 | 3,280 | 2,360 | 4,180 | 3,370 | 4,060 | 3,580 | 250  | 4,100 | 290   | 4,200 | 2,900 | 7,300 | 2,000 | 1,510 | 43,380 | 3,099   |
| 12.....                       | Wheat.....        | do.....            | 3,630 | 3,840 | 3,120 | 4,600 | 3,280 | 3,000 | 3,270 | 210  | 2,900 | 220   | 5,000 | 3,400 | 6,200 | 1,450 | 1,050 | 41,540 | 2,967   |
| 13.....                       | do.....           | do.....            | 3,840 | 3,150 | 3,570 | 4,980 | 3,620 | 3,690 | 4,460 | 280  | 3,900 | 290   | 4,000 | 3,200 | 5,900 | 1,600 | 1,200 | 43,840 | 3,131   |
| 14.....                       | Oats.....         | do.....            | 3,380 | 4,030 | 3,540 | 5,390 | 3,700 | 4,470 | 4,410 | 340  | 3,800 | 200   | 4,400 | 4,000 | 7,100 | 2,280 | 1,500 | 49,160 | 3,511   |
|                               |                   |                    |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE HUNTLEY (MONT.) FIELD STATION—Continued

TABLE 54.—Annual acre yields of specified crops grown in rotations on individual plots at Huntley, Mont., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919 | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN TOTAL—con.               |               |                |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| 245                           | Flax          | Spring plowed  |       |       | 2,890 | 6,050 | 2,230 | 5,190 | 4,020 | 40   | 3,900 | 380   | 4,600 | 3,400 | 6,200 | 2,540 | 840   | 39,390 | 3,283   |
| 246                           | do            | do             |       |       | 2,670 | 5,750 | 2,420 | 4,310 | 3,290 | 30   | 2,400 | 210   | 3,700 | 2,400 | 5,500 | 1,320 | 500   | 31,830 | 2,653   |
| Average                       |               |                |       | 3,617 | 3,283 | 4,905 | 3,567 | 4,089 | 4,601 | 247  | 3,397 | 363   | 4,274 | 3,053 | 5,439 | 1,912 | 1,053 | 41,983 | 3,140   |
| E                             | Corn          | Subsoiled      | 2,400 | 4,100 | 2,590 | 4,850 | 5,320 | 4,420 | 4,440 | 440  | 2,500 | 850   | 3,500 | 3,100 | 4,400 | 1,550 | 850   | 42,940 | 3,067   |
| F                             | do            | Spring listed  | 2,730 | 3,410 | 3,530 | 5,080 | 5,340 | 4,480 | 3,700 | 320  | 2,200 | 1,800 | 4,000 | 4,100 | 3,800 | 1,810 | 1,400 | 44,970 | 3,212   |
| Average                       |               |                |       | 3,755 | 3,060 | 4,965 | 5,330 | 4,450 | 4,020 | 380  | 2,350 | 1,325 | 3,750 | 3,600 | 4,100 | 1,695 | 1,125 | 43,455 | 3,140   |
| CORN GRAIN                    |               |                |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| A                             | Corn          | Spring plowed  | 12.9  | 24.4  | 19.2  | 36.3  | 17.5  | 25.0  | 15.7  | 0    | 19.6  | 5.4   | 25.1  | 7.1   | 33.6  | 4.0   | 0     | 232.9  | 16.6    |
| B                             | do            | Fall plowed    | 10.6  | 14.9  | 13.2  | 40.6  | 28.4  | 21.4  | 16.8  | 0    | 20.4  | 1.7   | 22.2  | 8.6   | 28.3  | 6.4   | 0     | 219.9  | 15.7    |
| Average                       |               |                |       | 19.7  | 16.2  | 38.5  | 21.5  | 23.2  | 16.3  | 0    | 20.0  | 3.6   | 23.7  | 7.9   | 31.0  | 5.2   | 0     | 226.4  | 16.2    |
| C or D                        | Fallow        | Fallowed       | 11.0  | 28.3  | 25.0  | 45.6  | 36.8  | 40.7  | 39.6  | 0    | 20.5  | 14.6  | 28.2  | 53.8  | 33.9  | 24.4  | 0     | 391.4  | 28.0    |
| 1                             | Oats          | Fall plowed    | 17.4  | 20.3  | 18.8  | 41.3  | 24.4  | 19.0  | 15.6  | 0    | 22.6  | 0     | 20.8  | 2.5   | 38.8  | 1.7   | 0     | 225.8  | 16.1    |
| 2                             | do            | Spring plowed  | 16.1  | 28.1  | 24.0  | 34.6  | 23.2  | 32.0  | 16.4  | 0    | 22.3  | 0     | 24.7  | 6.5   | 36.8  | 4.3   | 0     | 252.9  | 18.1    |
| 3                             | do            | Fall plowed    | 18.4  | 20.1  | 22.2  | 39.8  | 23.7  | 24.9  | 21.6  | 0    | 18.1  | 0     | 21.0  | 1.7   | 31.9  | 1.3   | 0     | 226.3  | 16.2    |
| 4                             | Wheat         | do             | 18.9  | 23.6  | 18.8  | 30.4  | 20.7  | 27.3  | 29.6  | 0    | 18.6  | 0     | 20.7  | 3.9   | 36.3  | 2.5   | 0     | 232.4  | 16.6    |
| 6                             | Oats          | do             | 22.4  | 18.0  | 18.9  | 43.5  | 25.1  | 28.3  | 30.8  | 0    | 14.5  | 0     | 18.5  | 3.3   | 37.6  | 2.1   | 0     | 240.6  | 17.2    |
| 7                             | Barley        | Spring plowed  | 17.0  | 33.4  | 24.2  | 41.8  | 18.2  | 31.9  | 14.9  | 0    | 20.0  | 0     | 29.2  | 7.6   | 37.9  | 2.7   | 0     | 261.8  | 18.7    |
| 9                             | Wheat         | do             | 16.3  | 28.0  | 18.6  | 34.0  | 22.8  | 24.1  | 15.2  | 0    | 18.4  | 0     | 25.1  | 11.5  | 30.0  | 2.9   | 0     | 230.6  | 16.5    |
| 13                            | Oats          | do             |       |       | 20.0  | 35.0  | 22.8  | 35.7  | 20.5  | 0    | 23.2  | 0     | 28.6  | 4.7   | 43.5  | 6.3   | 0     | 220.3  | 18.4    |
| 14                            | do            | do             | 17.6  | 30.1  | 20.7  | 37.3  | 16.6  | 32.0  | 22.5  | 0    | 22.3  | 0     | 26.8  | 11.0  | 42.6  | 6.8   | 0     | 268.7  | 19.2    |
| 15                            | Wheat         | do             | 18.9  | 29.3  | 21.5  | 38.6  | 20.7  | 25.3  | 17.6  | 0    | 20.3  | 0     | 27.9  | 10.3  | 42.8  | 4.9   | 0     | 259.2  | 18.5    |
| 16                            | Oats          | do             | 17.0  | 29.7  | 22.8  | 38.4  | 15.2  | 30.3  | 13.1  | 0    | 24.7  | 0     | 25.1  | 7.2   | 48.3  | 6.7   | 0     | 261.5  | 18.7    |
| 17                            | Wheat         | do             | 11.9  | 27.0  | 22.8  | 36.4  | 14.5  | 22.9  | 20.7  | 0    | 23.8  | 0     | 28.6  | 6.8   | 39.9  | 3.3   | 0     | 246.7  | 17.6    |
| 18                            | do            | do             | 13.4  | 27.9  | 25.3  | 41.4  | 18.5  | 27.3  | 29.9  | 0    | 21.2  | 0     | 29.3  | 4.9   | 35.8  | 2.7   | 0     | 264.2  | 18.9    |
| 19                            | Oats          | do             | 18.3  | 31.1  | 21.5  | 45.3  | 17.7  | 31.4  | 20.9  | 0    | 24.4  | 0     | 28.1  | 15.0  | 48.1  | 9.1   | 0     | 292.6  | 20.9    |
| 31                            | do            | do             |       |       | 14.0  | 43.4  | 23.9  | 39.9  | 22.5  | 0    | 24.5  | 0     | 28.9  | 4.9   | 39.9  | 5.3   | 0     | 233.2  | 19.4    |
| 32                            | Wheat         | do             |       |       | 22.1  | 41.5  | 20.3  | 21.9  | 21.9  | 0    | 23.1  | 0     | 32.4  | 6.7   | 39.0  | 2.5   | 0     | 209.3  | 17.4    |
| 40                            | Oats          | Fall plowed    | 11.4  | 18.9  | 13.3  | (3)   | 18.9  | 20.7  | 16.7  | 0    | 21.3  | 0     | 23.5  | 14.7  | 38.8  | 5.5   | 0     | 192.3  | 14.8    |
| 41                            | do            | Spring plowed  | 18.3  | 30.7  | 17.9  | 36.0  | 19.2  | 23.9  | 26.0  | 0    | 19.1  | 0     | 26.5  | 6.5   | 30.1  | 2.8   | 0     | 238.7  | 17.1    |
| 42                            | do            | do             | 19.3  | 22.1  | 16.7  | (3)   | 11.8  | 22.3  | 10.1  | 0    | 24.0  | 0     | 18.3  | 9.7   | 25.1  | 1.5   | 0     | 161.6  | 12.4    |
| 49                            | Wheat         | Fall plowed    | 15.3  | 16.9  | 23.3  | 35.8  | 24.8  | 26.0  | 27.7  | 0    | 23.1  | 0     | 27.8  | 4.7   | 37.9  | 3.3   | 0     | 251.3  | 18.0    |
| 51                            | Winter wheat  | Spring plowed  | 19.4  | 33.3  | 22.8  | 36.8  | 16.8  | 21.7  | 16.8  | 0    | 14.2  | 0     | 20.8  | 9.2   | 33.1  | 8.4   | 0     | 233.9  | 16.7    |
| 53                            | Barley        | do             | 18.1  | 30.9  | 24.6  | 35.1  | 18.3  | 31.3  | 19.3  | 0    | 20.6  | 0     | 29.7  | 3.8   | 36.4  | 8.1   | 0     | 258.1  | 18.4    |
| 54                            | do            | do             | 21.3  | 30.1  | 24.6  | 41.0  | 15.5  | 33.6  | 16.0  | 0    | 13.6  | 0     | 28.1  | 3.3   | 34.6  | 6.9   | 0     | 247.3  | 17.7    |
| 57                            | Winter wheat  | do             | 15.4  | 30.9  | 21.0  | 34.4  | 14.6  | 30.6  | 21.1  | 0    | 19.1  | 2.3   | 26.1  | 6.1   | 39.7  | 4.7   | 0     | 250.6  | 17.9    |
| 68                            | Oats          | do             | 16.1  | 26.4  | 21.0  | 40.0  | 26.2  | 29.7  | 11.7  | 0    | 20.1  | 0     | 17.8  | 2.9   | 39.4  | 12.3  | 0     | 247.5  | 17.7    |
| 69                            | do            | do             |       |       | 14.3  | 45.0  | 17.9  | 52.4  | 29.6  | 0    | 21.7  | 0     | 37.4  | 4.2   | 37.5  | 11.1  | 0     | 256.8  | 21.4    |
| 70                            | do            | do             |       |       | 13.2  | 36.9  | 26.2  | 15.4  | 17.1  | 0    | 23.0  | 0     | 26.3  | 6.1   | 33.5  | 6.5   | 0     | 191.0  | 15.9    |
| 85                            | Winter wheat  | Fall plowed    |       |       | 14.4  | 38.8  | 44.6  | 31.0  | 65.7  | 0    | 22.9  | 0     | 38.3  | 14.6  | 33.3  | 2.0   | 0     | 291.2  | 24.3    |
| 92                            | do            | Spring plowed  | 14.6  | 30.1  | 26.4  | 36.6  | 13.5  | 18.0  | 18.4  | 0    | 12.3  | 0     | 21.3  | 3.6   | 24.6  | 6.9   | 0     | 211.7  | 15.1    |
| 114                           | Oats          | do             | 19.9  | 27.9  | 24.7  | 38.8  | 14.5  | 31.9  | 25.1  | 0    | 14.7  | 0     | 27.9  | 3.6   | 32.1  | 4.0   | 0     | 245.2  | 17.5    |
| 115                           | Winter wheat  | do             | 23.6  | 34.9  | 24.2  | 33.6  | 21.4  | 26.7  | 24.7  | 0    | 20.8  | 0     | 26.4  | 7.4   | 37.6  | 5.7   | 0     | 263.4  | 18.8    |
| 116                           | Oats          | do             | 15.7  | 29.1  | 24.4  | 35.8  | 14.1  | 28.0  | 25.6  | 0    | 19.5  | 0     | 28.2  | 3.5   | 32.6  | 5.5   | 0     | 246.3  | 17.6    |
| 117                           | Winter wheat  | do             | 14.7  | 35.9  | 24.0  | 33.6  | 24.5  | 25.7  | 30.4  | 0    | 14.3  | 0     | 27.6  | 7.2   | 36.7  | 11.3  | 0     | 271.2  | 19.4    |
| 118                           | do            | do             | 16.0  | 34.2  | 27.6  | 34.4  | 15.8  | 29.9  | 51.3  | 0    | 13.8  | 3.4   | 39.4  | 6.5   | 33.2  | 15.3  | 0     | 304.8  | 21.8    |
| 213                           | Flax          | do             |       |       | 13.6  | 41.3  | 14.2  | 34.3  | 39.3  | 0    | 26.9  | 0     | 30.7  | 15.4  | 43.2  | 5.7   | 0     | 251.0  | 20.9    |
| 244                           | do            | Fall plowed    |       |       | 10.8  | 42.5  | 16.3  | 16.1  | 27.9  | 0    | 21.6  | 0     | 23.2  | 7.1   | 31.9  | 2.4   | 0     | 189.0  | 15.8    |
| 245                           | do            | Spring plowed  |       |       | 18.2  | 50.4  | 11.4  | 17.3  | 8.1   | 0    | 26.8  | 0     | 29.4  | 10.8  | 39.4  | 3.2   | 0     | 196.8  | 16.4    |
| 246                           | do            | do             |       |       | 13.2  | 44.4  | 12.4  | 25.1  | 4.4   | 0    | 19.7  | 0     | 16.3  | 2.5   | 31.8  | 1.6   | 0     | 158.2  | 13.2    |
| Average                       |               |                |       | 27.8  | 22.0  | 38.7  | 19.5  | 27.5  | 22.8  | 0    | 20.4  | .15   | 26.5  | 6.9   | 36.6  | 5.3   | 0     | 239.1  | 17.8    |
| E                             | Corn          | Subsoiled      | 13.6  | 25.7  | 13.9  | 42.5  | 29.6  | 15.9  | 15.3  | 0    | 13.4  | .9    | 21.0  | 14.4  | 25.4  | 5.1   | 0     | 223.1  | 15.9    |
| F                             | do            | Spring listed  | 19.0  | 30.1  | 22.5  | 40.6  | 27.9  | 31.7  | 28.9  | 0    | 16.6  | 14.9  | 33.3  | 39.0  | 33.5  | 13.5  | 0     | 332.5  | 23.8    |
| Average                       |               |                |       | 27.9  | 18.2  | 41.6  | 28.8  | 23.8  | 22.1  | 0    | 15.0  | 7.9   | 27.2  | 26.7  | 29.5  | 9.3   | 0     | 277.8  | 19.9    |
| BARLEY                        |               |                |       |       |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |
| A                             | Barley        | Spring plowed  |       |       | 37.1  | 56.7  | 7.7   | 12.1  | 3.5   | .1   | 9.0   | 2.3   | 24.4  | 1.9   | 29.6  | 7.9   | 1.0   | 156.2  | 13.0    |
| B                             | do            | Fall plowed    |       |       | 37.5  | 46.9  | 13.1  | 8.3   | 5.4   | 0    | 6.9   | .4    | 17.7  | 1.3   | 17.3  | 2.3   | .6    | 120.2  | 10.0    |
| Average                       |               |                |       |       |       | 51.8  | 10.4  | 10.2  | 4.5   | .5   | 8.0   | 1.4   | 21.1  | 1.6   | 23.5  | 5.1   | .8    | 138.2  | 11.5    |
| C or D                        | Fallow        | Fallowed       |       |       | 38.1  | 62.5  | 32.7  | 24.2  | 19.0  | 6.0  | 4.2   | 15.2  | 16.0  | 10.6  | 16.7  | 33.8  | 2.1   | 243.0  | 20.3    |
| 6                             | Corn          | Disked         | 4.4   | 27.1  | 41.9  | 67.1  | 20.2  | 16.3  | 7.5   | .5   | 19.6  | 6.7   | 29.0  | 1.9   | 35.6  | 12.1  | 0     | 285.5  | 20.4    |
| 7                             | Oats          | Spring plowed  | 6.5   | 30.6  | 34.6  | 22.3  | 9.6   | 16.0  | 11.5  | .3   | 17.1  | 3.5   | 30.4  | 2.5   | 33.5  | 9.6   | .6    | 222.1  | 15.9    |
| 51                            | Corn          | Disked         | 4.4   | 29.0  | 44.0  | 64.0  | 13.5  | 12.5  | 6.0   | 0    | 12.9  | 6.7   | 23.3  | 2.9   | 25.0  | 8.3   | .6    | 248.7  | 17.8    |
| 53                            | Winter rye    | Green manured  | 2.7   | 24.6  | 55.6  | 70.8  | 37.7  | 20.6  | 11.9  | .6   | 15.8  | 13.3  | 19.8  | 7.3   | 25.8  | 8.8   | .4    | 313.0  | 22.4    |
| 54                            | Peas          | do             | 4.6   | 45.4  | 63.3  | 60.0  | 30.6  | 20.4  | 17.7  | .3   | 19.2  | 5.2   | 17.3  | 11.9  | 21.7  | 15.8  | .8    | 332.4  | 23.7    |
| 57                            | Corn          | Disked         | 5.8   | 34.0  | 48.8  | 66.5  | 16.3  | 17.9  | 7.3   | .2   | 18.1  | 10.2  | 28.8  | 2.5   | 31.7  | 18.5  | 1.3   | 302.1  | 21.6    |
| 85                            | Flax          | do             |       |       | 20.0  | 54.2  | 15.8  | 14.8  | 7.3   | .9   | 34.0  | .0    | 18.8  | 2.9   | 39.6  | 18.3  | 0     | 207.5  | 17.3    |
| 92                            | Corn          | do             | 4.4   | 26.3  |       |       |       |       |       |      |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE HUNTLEY (MONT.) FIELD STATION—Continued

TABLE 54.—Annual acre yields of specified crops grown in rotations on individual plots at Huntley, Mont., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912 | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919 | 1920  | 1921 | 1922  | 1923  | 1924  | 1925  | 1926 | Total  | Average |
|-------------------------------|---------------|----------------|------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|-------|-------|-------|------|--------|---------|
| FLAX—con.                     |               |                |      |       |       |       |       |       |       |      |       |      |       |       |       |       |      |        |         |
| 85                            | Corn          | Spring plowed  |      |       | 7.7   | 21.4  | 3.9   | 8.4   | 9.5   | .2   | 4.3   | 7.0  | 15.0  | 6.4   | 17.5  | 4.6   | 3.0  | 101.2  | 8.4     |
| 243                           | do            | do             |      |       | 5.9   | 22.5  | 3.6   | 6.4   | 6.1   | .4   | 6.4   | 3.9  | 14.3  | 4.6   | 15.5  | 2.7   | 0    | 86.4   | 7.2     |
| 244                           | do            | Fall plowed    |      |       | 8.0   | 21.6  | 3.8   | 5.2   | 7.1   | 0    | 8.0   | 2.1  | 10.5  | 5.7   | 23.2  | 3.0   | 0    | 90.2   | 7.5     |
| 245                           | do            | Disked         |      |       | 6.4   | 23.9  | 5.0   | 4.8   | 6.4   | 0    | 8.2   | 4.3  | 15.5  | 5.0   | 17.9  | 3.8   | 1.8  | 96.6   | 8.1     |
| 246                           | do            | do             |      |       | 10.7  | 21.4  | 4.1   | 7.1   | 5.5   | 0    | 6.6   | 2.0  | 8.4   | 4.3   | 14.5  | 3.0   | 2.5  | 79.4   | 6.6     |
| 247                           | Wheat         | Spring plowed  |      |       | 7.1   | 17.9  | 7.1   | 8.0   | 7.5   | .4   | 8.9   | 2.5  | 13.4  | 3.6   | 20.4  | 2.7   | 0    | 92.4   | 7.7     |
| 248                           | Oats          | do             |      |       | 11.3  | 16.8  | 2.7   | 4.5   | 8.8   | 0    | 6.4   | .7   | 11.4  | 4.8   | 16.3  | 4.6   | 0    | 77.0   | 6.4     |
| Average                       |               |                |      |       |       | 20.8  | 4.3   | 6.3   | 7.3   | .1   | 7.0   | 3.2  | 12.6  | 4.9   | 17.9  | 3.5   | 1.0  | 89.0   | 7.4     |
| 18-inch rows                  | Flax          | Fall plowed    |      |       | 9.1   | 12.9  | 9.1   | 8.2   | 5.5   | .9   | 2.0   | 1.6  | 2.0   | 2.3   | 2.5   | 1.8   | 0    | 48.8   | 4.1     |
| E                             | do            | Subsoiled      | 7.5  | 12.0  | 4.6   | 13.4  | 4.5   | 6.6   | 6.6   | 0    | .7    | 1.3  | 9.6   | 3.2   | 5.0   | 3.0   | 0    | 70.5   | 5.0     |
| F                             | do            | Fall listed    | 6.8  | 8.9   | 6.3   | 17.0  | 9.6   | 8.2   | 4.8   | 0    | 1.4   | 1.6  | 8.2   | 2.9   | 4.5   | 4.1   | 0    | 77.5   | 5.5     |
| Average                       |               |                |      | 10.5  | 5.5   | 15.2  | 7.1   | 7.4   | 5.7   | 0    | 1.1   | 1.5  | 8.9   | 3.1   | 4.8   | 3.6   | 0    | 74.0   | 5.3     |
| BROMEGRASS                    |               |                |      |       |       |       |       |       |       |      |       |      |       |       |       |       |      |        |         |
| 41                            | Wheat         | Disked         | 0    | 1,100 | 1,300 | 0     | 1,260 | 0     | 0     | 0    | 0     | 0    | 0     | 0     | 0     | 0     | 0    | 3,660  | 261     |
|                               | Brome grass   |                | 0    | 1,180 | 1,400 | 0     | 1,300 | 200   | 1,100 | 0    | 0     | 0    | 2,000 | 350   | 1,000 | 0     | 0    | 8,530  | 609     |
|                               | do            |                | 0    | 1,150 | 1,350 | 0     | 840   | 500   | 760   | 0    | 2,180 | 0    | 2,900 | 600   | 1,300 | 100   | 280  | 11,960 | 854     |
| Average                       |               |                |      | 1,143 | 1,350 | 0     | 1,133 | 233   | 620   | 0    | 727   | 0    | 1,633 | 317   | 767   | 33    | 93   | 8,050  | 575     |
| ALFALFA                       |               |                |      |       |       |       |       |       |       |      |       |      |       |       |       |       |      |        |         |
| 42                            | Wheat         | Fall plowed    | 0    | 610   | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 0     | 0     | 0     | 0     | 0    | 610    | 44      |
|                               | Alfalfa       |                | 0    | 1,100 | 2,400 | 2,180 | 840   | 900   | 1,080 | 0    | 2,240 | 0    | 0     | 1,700 | 2,400 | 1,200 | 0    | 16,040 | 1,146   |
|                               | do            |                | 0    | 1,120 | 2,350 | 2,060 | 1,200 | 1,200 | 1,640 | 0    | 1,640 | 0    | 3,300 | 2,100 | 2,400 | 500   | 500  | 20,010 | 1,429   |
| Average                       |               |                |      | 943   | 1,583 | 1,413 | 680   | 700   | 907   | 0    | 1,293 | 0    | 1,100 | 1,267 | 1,600 | 567   | 167  | 12,220 | 873     |

TABLE 55.—Annual acre yields of specified crops grown in rotations on individual plots at Dickinson, N. Dak., in one or more years from 1907 to 1926

[illegible]



|                         | Corn.....        | 32.2 | 33.8 | 40.7 | 22.5 | 3.2 | 0 | 27.7 | 13.2 | 36.7 | 29.2 | 13.7 | 2.2 | 1.3 | 18.8 | 3.6 | 30.9 | 12.8 | 20.3 | 9.2  | 0   | 319.8 | 16.8 |
|-------------------------|------------------|------|------|------|------|-----|---|------|------|------|------|------|-----|-----|------|-----|------|------|------|------|-----|-------|------|
|                         | Winter rye.....  | 32.8 | 31.7 | 38.0 | 19.3 | 6.0 | 0 | 27.8 | 22.1 | 40.7 | 22.0 | 14.0 | 4.2 | 2.0 | 15.8 | 3.4 | 29.3 | 13.5 | 22.3 | 19.7 | 5.3 | 337.1 | 17.7 |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
|                         | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
|                         | Potatoes.....    |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| MARQUIS SPRING<br>WHEAT |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Normal-school<br>field: |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| A.....                  | Wheat.....       |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| B.....                  | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| C or D.....             | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 473.....                | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| OATS                    |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Normal school<br>field: |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 18.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 19.....                 | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 68.....                 | Wheat.....       |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 71.....                 | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 72.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 416.....                | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 417.....                | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 420.....                | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 579.....                | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 258.....                | Oats.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Main field:             |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| A.....                  | Oats.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| B.....                  | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| C or D.....             | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 1.....                  | Wheat.....       |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 2.....                  | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 3.....                  | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 4.....                  | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 5.....                  | Wheat.....       |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 6.....                  | Barley.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 7.....                  | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 8.....                  | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 9.....                  | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 10.....                 | Bromegrass.....  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 11.....                 | Clover.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 12.....                 | Flax.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 14.....                 | Winter rye.....  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 15.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 16.....                 | Pas.....         |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 17.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 18.....                 | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 19.....                 | Fallow.....      |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 31.....                 | Sweetclover..... |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 32.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 42.....                 | Alfalfa.....     |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 61.....                 | Wheat.....       |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 62.....                 | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 63.....                 | do.....          |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| Average.....            |                  |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |
| 40.....                 | Corn.....        |      |      |      |      |     |   |      |      |      |      |      |     |     |      |     |      |      |      |      |     |       |      |

<sup>1</sup> In 1923 all spring-wheat plots on the normal-school field were spring plowed.

<sup>2</sup> Clean cultivated in 1913 to kill quack grass.

<sup>3</sup> The oat stands in the normal-school field in 1925 were greatly injured by a freeze on May 16. All plots were double-disked and reseeded on June 6. The variations in yields are partly due to weeds and thin stands, particularly on fallow.



## CROP YIELDS AT THE DICKINSON (N. DAK.) FIELD STATION—Continued

TABLE 55.—Annual acre yields of specified crops grown in rotations on individual plots at Dickinson, N. Dak., in one or more years from 1907 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method | 1907  | 1908  | 1909  | 1910  | 1911  | 1912 | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|---------------------------------------|---------------|----------------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN TOTAL                            |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed  | 2,370 | 2,000 | 6,660 | 4,250 | 4,300 | 0    | 4,080 | 2,310 | 2,260 | 2,390 | 2,270 | 2,000 | 2,610 | 5,500 | 2,020 | 3,400 | 6,830 | 3,770 | 3,470 | 3,500 | 61,220 | 3,380   |
| B.....                                | do.....       | Fall plowed    | 1,800 | 1,660 | 5,930 | 4,180 | 4,500 | 0    | 3,600 | 2,090 | 2,260 | 3,240 | 1,680 | 3,040 | 3,760 | 5,000 | 2,180 | 4,370 | 5,960 | 4,860 | 3,080 | 2,300 | 63,400 | 3,337   |
| Average.....                          |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| C or D.....                           | Fallow        | Fallow         | 1,570 | 1,070 | 5,100 | 1,850 | 4,800 | 0    | 3,540 | 2,200 | 2,260 | 2,825 | 1,975 | 2,520 | 3,185 | 5,250 | 2,400 | 3,885 | 6,395 | 4,315 | 3,275 | 3,045 | 63,810 | 3,359   |
| C or D.....                           |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1.....                                | Oats.....     | Fall plowed    | 1,990 | 2,050 | 5,880 | 3,270 | 3,500 | 0    | 4,580 | 2,410 | 2,460 | 5,050 | 1,040 | 3,210 | 1,790 | 4,400 | 2,140 | 5,360 | 6,810 | 4,010 | 3,000 | 1,100 | 63,350 | 3,334   |
| 2.....                                | do.....       | Spring plowed  | 1,670 | 1,340 | 5,910 | 3,030 | 4,700 | 0    | 3,600 | 3,700 | 3,100 | 5,100 | 1,500 | 3,840 | 3,060 | 5,060 | 4,400 | 5,120 | 7,890 | 5,450 | 4,200 | 1,000 | 72,830 | 3,833   |
| 3.....                                | do.....       | Fall plowed    | 1,510 | 2,510 | 5,560 | 3,310 | 3,200 | 0    | 4,780 | 2,570 | 2,260 | 4,950 | 780   | 2,040 | 1,380 | 4,000 | 1,690 | 4,510 | 6,980 | 3,980 | 2,410 | 1,000 | 58,580 | 3,063   |
| 4.....                                | Wheat.....    | do.....        | 1,260 | 2,330 | 5,670 | 3,300 | 3,200 | 0    | 3,800 | 3,140 | 3,120 | 4,950 | 1,240 | 2,710 | 1,410 | 3,900 | 2,150 | 4,400 | 6,900 | 4,000 | 2,720 | 1,800 | 58,730 | 3,091   |
| 5.....                                | Oats.....     | do.....        | 1,300 | 2,100 | 5,770 | 3,830 | 3,000 | 0    | 4,440 | 2,970 | 3,010 | 5,150 | 1,240 | 2,550 | 1,110 | 3,700 | 2,075 | 4,330 | 7,070 | 5,020 | 2,720 | 940   | 60,955 | 3,210   |
| 6.....                                | Barley.....   | Spring plowed  | 2,180 | 1,480 | 5,500 | 3,670 | 3,000 | 0    | 3,840 | 2,970 | 3,780 | 4,270 | 1,870 | 3,510 | 2,020 | 4,300 | 2,720 | 5,110 | 7,040 | 5,900 | 3,480 | 1,300 | 66,360 | 3,487   |
| 7.....                                | Wheat.....    | do.....        | 1,300 | 2,800 | 4,940 | 3,260 | 3,850 | 0    | 3,800 | 3,670 | 3,600 | 4,430 | 1,750 | 3,240 | 1,420 | 4,800 | 1,650 | 4,320 | 7,510 | 5,440 | 3,200 | 1,300 | 63,260 | 3,421   |
| 8.....                                | Oats.....     | do.....        | 1,010 | 2,810 | 5,500 | 2,140 | 4,200 | 0    | 3,220 | 3,560 | 2,000 | 4,400 | 495   | 3,400 | 1,180 | 5,800 | 3,600 | 5,900 | 9,020 | 6,030 | 3,200 | 1,620 | 70,620 | 3,717   |
| 9.....                                | do.....       | do.....        | 1,300 | 3,270 | 5,740 | 3,760 | 3,740 | 0    | 2,840 | 2,750 | 2,000 | 4,500 | 1,020 | 3,740 | 2,420 | 4,030 | 4,170 | 5,000 | 9,030 | 5,410 | 2,830 | 1,500 | 68,270 | 3,503   |
| 10.....                               | do.....       | do.....        | 1,630 | 3,000 | 5,740 | 3,760 | 3,740 | 0    | 3,570 | 2,600 | 2,000 | 4,500 | 1,100 | 3,400 | 1,180 | 5,800 | 3,600 | 5,900 | 9,030 | 5,410 | 2,830 | 1,500 | 68,270 | 3,503   |
| 11.....                               | do.....       | do.....        | 1,410 | 2,880 | 5,730 | 3,870 | 4,150 | 0    | 3,220 | 2,640 | 4,100 | 5,370 | 1,300 | 2,210 | 1,810 | 5,830 | 2,730 | 4,850 | 7,870 | 5,750 | 4,520 | 1,800 | 76,280 | 4,015   |
| 12.....                               | Wheat.....    | do.....        | 2,080 | 4,480 | 6,460 | 3,690 | 5,210 | 0    | 3,670 | 3,550 | 3,350 | 4,490 | 1,280 | 4,160 | 2,330 | 4,700 | 3,350 | 5,450 | 7,500 | 4,970 | 3,670 | 1,700 | 71,400 | 3,703   |
| 13.....                               | Oats.....     | do.....        | 1,380 | 3,050 | 6,120 | 3,370 | 4,530 | 0    | 2,100 | 3,180 | 4,720 | 4,220 | 1,570 | 3,300 | 1,460 | 4,360 | 2,800 | 5,400 | 7,270 | 5,800 | 3,070 | 1,700 | 63,300 | 3,442   |
| 14.....                               | Wheat.....    | do.....        | 2,600 | 3,310 | 5,920 | 3,370 | 4,710 | 0    | 2,100 | 3,180 | 4,720 | 4,220 | 1,570 | 3,300 | 1,460 | 4,360 | 2,800 | 5,400 | 7,270 | 5,800 | 3,070 | 1,700 | 63,300 | 3,442   |
| 15.....                               | Oats.....     | do.....        | 960   | 1,900 | 4,940 | 3,860 | 4,050 | 0    | 3,800 | 2,670 | 3,230 | 3,820 | 1,900 | 4,460 | 2,000 | 4,700 | 4,730 | 5,420 | 7,830 | 6,020 | 3,210 | 2,000 | 73,260 | 3,850   |
| 16.....                               | do.....       | do.....        | 1,250 | 2,740 | 5,220 | 3,950 | 4,100 | 0    | 3,480 | 2,670 | 3,230 | 3,820 | 1,630 | 3,940 | 2,770 | 4,900 | 4,560 | 5,420 | 7,830 | 6,020 | 3,210 | 2,000 | 73,260 | 3,850   |
| 17.....                               | Wheat.....    | do.....        | 680   | 1,610 | 6,330 | 3,310 | 4,500 | 0    | 3,180 | 2,680 | 3,400 | 4,000 | 1,320 | 3,570 | 1,710 | 5,600 | 3,780 | 5,200 | 7,390 | 6,070 | 3,800 | 1,700 | 70,740 | 3,723   |
| 18.....                               | do.....       | do.....        | 730   | 2,250 | 6,100 | 3,910 | 3,690 | 0    | 2,740 | 2,900 | 3,400 | 4,000 | 1,320 | 3,570 | 1,710 | 5,600 | 3,780 | 5,200 | 7,390 | 6,070 | 3,800 | 1,700 | 70,740 | 3,723   |
| 19.....                               | Oats.....     | do.....        | 600   | 3,100 | 4,810 | 3,920 | 4,210 | 0    | 2,810 | 4,220 | 4,990 | 3,950 | 1,330 | 4,200 | 1,610 | 4,800 | 3,600 | 5,300 | 7,400 | 5,820 | 3,780 | 1,500 | 66,260 | 3,457   |
| 20.....                               | do.....       | do.....        | 400   | 4,540 | 8,080 | 4,850 | 4,740 | 0    | 4,220 | 4,520 | 4,990 | 3,950 | 1,330 | 4,200 | 1,610 | 4,800 | 3,600 | 5,300 | 7,400 | 5,820 | 3,780 | 1,500 | 66,260 | 3,457   |
| Average.....                          |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| CORN GRAIN                            |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed  | 0     | 0     | 58.4  | 26.2  | 0     | 0    | 28.2  | 15.9  | 0     | 12.4  | 0     | 0     | 15.7  | 23.3  | 11.4  | 31.4  | 47.9  | 24.1  | 28.9  | 9.0   | 332.8  | 17.5    |
| B.....                                | do.....       | Fall plowed    | 0     | 0     | 52.4  | 26.1  | 0     | 0    | 27.9  | 12.7  | 0     | 13.0  | 0     | 0     | 23.0  | 15.8  | 7.4   | 32.7  | 53.7  | 30.3  | 16.8  | 3.9   | 318.7  | 16.8    |
| Average.....                          |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| C or D.....                           | Fallow        | Fallow         | 0     | 0     | 55.4  | 20.2  | 0     | 0    | 28.1  | 14.3  | 0     | 12.7  | 0     | 0     | 19.4  | 19.6  | 9.4   | 32.1  | 50.8  | 27.2  | 24.4  | 6.5   | 325.8  | 17.2    |
| C or D.....                           |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1.....                                | Oats.....     | Fall plowed    | 0     | 45.2  | 8.4   | 0     | 0     | 0    | 26.3  | 7.3   | 0     | 11.0  | 0     | 0     | 20.0  | 40.1  | 34.3  | 32.1  | 53.1  | 33.3  | 43.4  | 39.6  | 304.1  | 20.7    |
| 2.....                                | do.....       | Spring plowed  | 0     | 50.7  | 19.6  | 0     | 0     | 0    | 42.1  | 17.0  | 0     | 28.1  | 0     | 0     | 6.5   | 14.0  | 4.7   | 36.9  | 47.0  | 25.8  | 12.9  | 0     | 305.3  | 16.1    |
| 3.....                                | do.....       | Fall plowed    | 0     | 49.7  | 21.2  | 0     | 0     | 0    | 31.9  | 25.4  | 0     | 25.0  | 0     | 0     | 18.6  | 11.9  | 17.4  | 32.9  | 53.0  | 31.0  | 30.0  | 0     | 348.0  | 18.3    |
| 4.....                                | Wheat.....    | do.....        | 0     | 0     | 48.3  | 22.0  | 0     | 0    | 28.2  | 17.6  | 0     | 20.6  | 0     | 0     | 3.8   | 4.2   | 2.1   | 29.6  | 46.0  | 21.0  | 9.4   | 0     | 261.3  | 13.8    |
| 5.....                                | Oats.....     | do.....        | 0     | 0     | 48.3  | 22.0  | 0     | 0    | 28.2  | 17.6  | 0     | 20.6  | 0     | 0     | 3.8   | 4.2   | 2.1   | 29.6  | 46.0  | 21.0  | 9.4   | 0     | 261.3  | 13.8    |
| 6.....                                | Barley.....   | Spring plowed  | 0     | 0     | 50.3  | 24.5  | 0     | 0    | 20.6  | 18.1  | 0     | 18.9  | 0     | 0     | 9.7   | 13.9  | 5.7   | 13.6  | 43.9  | 20.6  | 9.0   | 0     | 258.5  | 13.6    |
| 7.....                                | Wheat.....    | do.....        | 0     | 0     | 46.7  | 22.8  | 0     | 0    | 24.7  | 18.3  | 0     | 18.9  | 0     | 0     | 9.7   | 13.9  | 5.7   | 13.6  | 43.9  | 20.6  | 9.0   | 0     | 277.7  | 14.6    |
| 8.....                                | Oats.....     | do.....        | 0     | 0     | 43.5  | 18.1  | 0     | 0    | 20.0  | 23.3  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 9.....                                | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 10.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 11.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 12.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 13.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 14.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 15.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 16.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 17.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 18.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 19.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| 20.....                               | do.....       | do.....        | 0     | 0     | 46.0  | 21.1  | 0     | 0    | 20.0  | 23.1  | 0     | 20.9  | 0     | 0     | 5.3   | 12.4  | 2.4   | 19.4  | 50.1  | 21.8  | 19.4  | 0     | 266.1  | 14.0    |
| Average.....                          |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| CORN GRAIN                            |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed  | 0     | 0     | 58.4  | 26.2  | 0     | 0    | 28.2  | 15.9  | 0     | 12.4  | 0     | 0     | 15.7  | 23.3  | 11.4  | 31.4  | 47.9  | 24.1  | 28.9  | 9.0   | 332.8  | 17.5    |
| B.....                                | do.....       | Fall plowed    | 0     | 0     | 52.4  | 26.1  | 0     | 0    | 27.9  | 12.7  | 0     | 13.0  | 0     | 0     | 23.0  | 15.8  | 7.4   | 32.7  | 53.7  | 30.3  | 16.8  | 3.9   | 318.7  | 16.8    |
| Average.....                          |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| C or D.....                           | Fallow        | Fallow         | 0     | 0     | 55.4  | 20.2  | 0     | 0    | 28.1  | 14.3  | 0     | 12.7  | 0     | 0     | 19.4  | 19.6  | 9.4   | 32.1  | 50.8  | 27.2  | 24.4  | 6.5   | 325.8  | 17.2    |
| C or D.....                           |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                                       |               |                |       |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |





## CROP YIELDS AT THE MANDAN (N. DAK.) FIELD STATION

TABLE 56.—Annual acre yields of specified crops grown in rotations on individual plots at Mandan, N. Dak., in one or more years from 1914 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1914 to 1924, see Figure 12 (p. 20), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, and sorgo are given in pounds; all other yields are stated in bushels]

| Crop, field, and rotation No. or plot | Previous crop    | Tillage method         | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|---------------------------------------|------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>                   |                  |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Main field:                           |                  |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Wheat.....       | Late fall plowed.....  | 34.5 | 27.4 | 19.3 | 12.2 | 8.2  | 8.3  | 0    | 0    | 13.0 |      |      |      |      | 88.4  | 11.1    |
| B.....                                | do.....          | Early fall plowed..... | 32.8 | 21.8 | 18.7 | 13.5 | 10.2 | 5.7  | 0    | 0    | 10.5 |      |      |      |      | 80.4  | 10.1    |
| E.....                                | do.....          | Subsoiled.....         | 32.3 | 27.1 | 18.2 | 7.8  | 5.0  | 6.7  | 0    | 0    | 13.3 |      |      |      |      | 78.1  | 9.8     |
| F.....                                | do.....          | Fall listed.....       | 32.3 | 10.0 | 20.5 | 9.8  | 8.5  | 4.5  | 1.0  | 0    | 8.7  |      |      |      |      | 53.0  | 7.6     |
| Average.....                          |                  |                        |      | 25.4 | 19.2 | 10.8 | 8.0  | 6.3  | .3   | 0    | 11.4 |      |      |      |      | 75.0  | 9.7     |
| C or D.....                           | Fallow.....      | Fallowed.....          | 34.3 | 41.8 | 18.2 | 16.7 | 22.8 | 14.0 | 7.3  | 1.7  | 22.3 |      |      |      |      | 144.8 | 18.1    |
| 270.....                              | Oats.....        | Stubbed in.....        |      |      |      |      |      |      |      |      |      | 2.5  | 23.3 | 0    | 0    | 23.3  | 7.8     |
|                                       | Fallow.....      | Fallowed.....          |      |      |      |      |      |      |      |      |      | 0    | 0    | 0    | 0    | 0     | 0       |
| Average.....                          |                  |                        |      |      |      |      |      |      |      |      |      | 11.7 | 0    | 0    |      | 11.7  | 3.9     |
| <b>SPRING WHEAT</b>                   |                  |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Main field:                           |                  |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Wheat.....       | Spring plowed.....     | 32.2 | 30.5 | 19.2 | 15.3 | 12.7 | 7.5  | 1.5  | 1.8  | 19.5 | 8.3  | 21.5 | 18.5 | 1.0  | 157.3 | 13.1    |
| B.....                                | do.....          | Fall plowed.....       | 31.0 | 32.1 | 18.5 | 14.8 | 15.3 | 5.3  | 1.0  | 0    | 12.2 | 2.8  | 15.8 | 14.2 | 0    | 132.0 | 11.0    |
| E.....                                | do.....          | Subsoiled.....         | 31.3 | 31.7 | 18.8 | 15.3 | 7.7  | 5.5  | 0    | 0    | 15.2 | 8.8  | 18.5 | 18.0 | 0    | 141.5 | 11.8    |
| F.....                                | do.....          | Fall listed.....       | 32.5 | 32.6 | 18.7 | 11.3 | 14.7 | 5.4  | 3.8  | 0    | 17.2 | 7.3  | 17.0 | 18.0 | 0    | 146.0 | 12.2    |
| Average.....                          |                  |                        |      | 31.7 | 18.8 | 14.2 | 12.6 | 6.4  | 1.6  | .5   | 16.0 | 6.8  | 18.2 | 17.2 | .3   | 144.2 | 12.0    |
| C or D.....                           | Fallow.....      | Fallowed.....          | 31.7 | 39.3 | 21.8 | 17.2 | 32.0 | 15.7 | 9.5  | 3.5  | 29.0 | 14.2 | 29.3 | 31.2 | 9.0  | 251.7 | 21.0    |
| H or I.....                           | do.....          | do.....                | 31.8 | 45.8 | 25.7 | 13.8 | 23.5 | 12.8 | 7.2  | 1.8  | 23.8 | 19.3 | 31.2 | 31.8 | 11.8 | 248.5 | 20.7    |
| J or K.....                           | do.....          | do.....                | 28.2 | 45.7 | 23.3 | 16.0 | 21.3 | 15.0 | 6.3  | 1.5  | 24.3 | 18.2 | 35.7 | 34.7 | 10.2 | 252.2 | 21.0    |
| L or M.....                           | do.....          | do.....                | 38.3 | 46.3 | 23.2 | 16.2 | 21.8 | 13.8 | 8.3  | 1.8  | 29.3 | 16.7 | 36.7 | 32.0 | 7.0  | 253.1 | 21.1    |
| N or O.....                           | do.....          | do.....                | 23.0 | 43.3 | 19.7 | 16.2 | 17.5 | 11.0 | 5.0  | 0    | 14.2 | 5.5  | 27.7 | 25.7 | 3.7  | 189.5 | 15.8    |
| Average.....                          |                  |                        |      | 44.1 | 22.7 | 15.9 | 23.2 | 13.7 | 7.3  | 1.7  | 24.1 | 14.8 | 32.1 | 31.1 | 8.3  | 239.0 | 19.9    |
| 1a.....                               | Corn.....        | Disked.....            | 36.7 | 37.3 | 21.8 | 16.0 | 23.7 | 15.7 | 5.0  | 1.5  | 21.5 | 8.7  | 22.5 | 20.5 | 2.3  | 196.5 | 16.4    |
| 1b.....                               | do.....          | do.....                | 33.3 | 41.1 | 21.5 | 15.5 | 11.8 | 14.2 | 8.3  | 0    | 25.2 | 12.3 | 22.3 | 21.8 | 3.0  | 197.0 | 16.4    |
| 1c.....                               | do.....          | do.....                | 31.2 | 32.8 | 18.2 | 11.2 | 14.2 | 12.0 | 4.2  | 0    | 25.3 | 8.0  | 22.5 | 21.3 | 1.8  | 171.5 | 14.3    |
| 2a.....                               | do.....          | Spring plowed.....     | 33.8 | 40.0 | 21.5 | 16.7 | 21.5 | 10.8 | 7.5  | 1.7  | 18.8 | 16.7 | 23.8 | 21.5 | 4.5  | 205.0 | 17.1    |
| 2b.....                               | do.....          | do.....                | 33.2 | 36.3 | 20.8 | 15.3 | 19.7 | 12.7 | 8.2  | 1.0  | 25.3 | 17.8 | 23.7 | 26.5 | 5.2  | 212.5 | 17.7    |
| 2c.....                               | do.....          | do.....                | 31.5 | 29.4 | 19.8 | 13.0 | 20.3 | 11.0 | 7.0  | 0    | 23.8 | 14.8 | 24.7 | 21.0 | 4.7  | 189.5 | 15.8    |
| 3a.....                               | do.....          | Fall plowed.....       | 34.8 | 38.8 | 22.3 | 12.3 | 17.7 | 15.8 | 2.3  | 0    | 18.0 | 8.3  | 25.0 | 21.2 | 1.2  | 182.9 | 15.2    |
| 3b.....                               | do.....          | do.....                | 32.2 | 30.2 | 23.8 | 10.3 | 14.2 | 13.8 | 4.2  | 0    | 21.8 | 11.0 | 22.3 | 21.7 | 2.0  | 175.3 | 14.6    |
| 3c.....                               | do.....          | do.....                | 33.0 | 30.1 | 21.7 | 9.5  | 14.0 | 11.5 | 4.5  | 0    | 17.2 | 7.5  | 22.7 | 20.7 | 1.8  | 161.2 | 13.4    |
| 4a.....                               | Oats.....        | do.....                | 30.8 | 37.4 | 23.5 | 13.5 | 7.7  | 12.3 | 2.7  | 0    | 18.5 | 6.8  | 20.5 | 19.5 | 0    | 162.4 | 13.5    |
| 4b.....                               | do.....          | do.....                | 31.5 | 34.3 | 22.8 | 13.0 | 10.5 | 8.2  | .7   | 0    | 16.2 | 5.7  | 18.0 | 21.0 | 0    | 140.4 | 11.7    |
| 4c.....                               | do.....          | do.....                | 34.3 | 32.3 | 23.8 | 15.8 | 10.3 | 10.0 | 3.3  | 0    | 15.8 | 7.2  | 20.8 | 20.0 | 0    | 159.3 | 13.3    |
| 5a.....                               | Fallow.....      | Fallowed.....          | 33.3 | 46.9 | 23.7 | 16.2 | 23.2 | 15.9 | 6.2  | 6.0  | 27.5 | 17.2 | 31.3 | 34.3 | 4.2  | 252.6 | 21.0    |
| 5b.....                               | do.....          | do.....                | 34.0 | 45.8 | 23.3 | 13.3 | 21.7 | 11.8 | 4.0  | 4.8  | 20.7 | 13.8 | 28.7 | 26.3 | 4.5  | 218.7 | 18.2    |
| 5c.....                               | do.....          | do.....                | 35.3 | 45.6 | 21.8 | 15.0 | 22.7 | 10.0 | 10.0 | 2.3  | 24.5 | 14.5 | 29.5 | 33.3 | 4.3  | 233.5 | 19.5    |
| 8a.....                               | Oats.....        | Fall plowed.....       | 33.5 | 34.2 | 24.7 | 17.7 | 11.8 | 12.8 | 9.0  | 0    | 33.2 | 15.2 | 22.5 | 29.5 | 0    | 210.6 | 17.6    |
| 8b.....                               | do.....          | do.....                | 33.8 | 32.7 | 21.3 | 12.0 | 9.7  | 9.3  | 1.0  | 0    | 17.2 | 6.5  | 20.5 | 22.3 | 0    | 152.5 | 12.7    |
| 8c.....                               | do.....          | do.....                | 35.7 | 33.2 | 24.3 | 15.3 | 16.2 | 6.2  | 3.3  | 0    | 17.3 | 7.0  | 18.5 | 21.2 | 0    | 162.5 | 13.5    |
| 9a.....                               | do.....          | Spring plowed.....     | 32.2 | 29.1 | 24.0 | 14.0 | 19.3 | 11.5 | 9.7  | 3.2  | 28.3 | 10.5 | 25.5 | 21.2 | 2.0  | 198.3 | 16.5    |
| 9b.....                               | do.....          | do.....                | 33.3 | 26.5 | 22.3 | 14.7 | 17.8 | 10.8 | 2.5  | 3.7  | 26.3 | 10.0 | 25.2 | 19.8 | 2.2  | 181.8 | 15.2    |
| 9c.....                               | do.....          | do.....                | 32.8 | 25.9 | 22.3 | 14.8 | 16.7 | 12.5 | 3.2  | 3.0  | 26.7 | 10.5 | 23.2 | 20.2 | 1.7  | 180.7 | 15.1    |
| 13.....                               | Corn.....        | Disked.....            | 32.2 | 38.6 | 18.0 | 12.8 | 10.0 | 8.3  | 8.2  | 1.0  | 22.2 | 14.7 | 23.8 | 21.5 | 2.0  | 181.1 | 15.1    |
| 14.....                               | do.....          | do.....                | 32.0 | 34.8 | 14.2 | 13.0 | 16.5 | 13.0 | 3.2  | 0    | 21.5 | 11.0 | 21.5 | 22.8 | 3.3  | 174.8 | 14.6    |
| 15.....                               | Winter rye.....  | Green manured.....     | 34.2 | 29.6 | 24.3 | 21.8 | 18.8 | 10.0 | 10.8 | 1.0  | 17.7 | 12.2 | 29.0 | 29.0 | 7.2  | 211.4 | 17.6    |
| 16.....                               | Corn.....        | Disked.....            | 28.8 | 33.3 | 16.0 | 14.8 | 11.2 | 11.3 | 6.0  | 0    | 21.5 | 11.8 | 23.2 | 23.5 | 1.8  | 174.4 | 14.5    |
| 17.....                               | Peas.....        | Green manured.....     | 34.3 | 38.1 | 27.5 | 22.7 | 25.5 | 11.0 | 0    | 0    | 10.7 | 8.3  | 23.7 | 22.2 | 2.3  | 192.0 | 16.0    |
| 18.....                               | Fallow.....      | Fallowed.....          | 31.5 | 37.8 | 19.7 | 18.7 | 23.7 | 12.0 | 7.0  | 3.5  | 18.5 | 15.0 | 30.7 | 31.2 | 6.7  | 224.5 | 18.7    |
| 19.....                               | Corn.....        | Disked.....            | 31.5 | 32.6 | 15.3 | 16.0 | 15.7 | 12.1 | 7.3  | 1.7  | 23.0 | 12.7 | 22.5 | 23.2 | 3.8  | 185.9 | 15.5    |
| 31.....                               | do.....          | do.....                | 34.2 | 36.3 | 18.3 | 16.5 | 15.8 | 12.3 | 2.2  | 1.3  | 14.8 | 11.0 | 16.7 | 20.7 | 1.3  | 167.2 | 13.9    |
| 32.....                               | Sweetclover..... | Green manured.....     | 32.5 | 32.4 | 28.2 | 17.8 | 12.2 | 13.7 | 4.7  | 1.5  | 12.5 | 12.7 | 25.2 | 22.7 | 0    | 183.6 | 15.3    |
| 41.....                               | Corn.....        | Disked.....            | 31.7 | 30.7 | 15.8 | 10.7 | 13.8 | 8.3  | 10.5 | 1.8  | 22.8 | 15.5 | 21.3 | 26.8 | 3.7  | 181.7 | 15.1    |
| 42.....                               | do.....          | do.....                | 33.3 | 36.6 | 23.0 | 13.7 | 17.5 | 14.2 | 9.0  | 0    | 28.2 | 14.2 | 25.2 | 29.3 | 1.0  | 211.9 | 17.7    |
| 49.....                               | do.....          | do.....                | 34.3 | 31.9 | 16.5 | 13.0 | 13.3 | 8.8  | 8.8  | 0    | 24.0 | 10.0 | 22.8 | 21.3 | 1.5  | 171.9 | 14.3    |
| 58.....                               | Oats.....        | Fall plowed.....       | 32.8 | 30.3 | 24.3 | 9.5  | 6.8  | 7.2  | 4.2  | 0    | 15.2 | 9.3  | 20.0 | 19.8 | 0    | 146.6 | 12.2    |
| 68.....                               | Corn.....        | Disked.....            | 37.3 | 33.6 | 23.0 | 14.7 | 13.0 | 13.5 | 13.2 | 1.7  | 31.8 | 13.2 | 24.5 | 30.0 | 0    | 212.2 | 17.7    |
| 69.....                               | do.....          | do.....                | 32.8 | 38.1 | 25.7 | 16.2 | 13.0 | 14.8 | 13.0 | 1.7  | 27.3 | 13.2 | 25.0 | 29.2 | 0    | 217.2 | 18.1    |
| 70.....                               | do.....          | do.....                | 32.5 | 30.8 | 15.5 | 14.3 | 15.0 | 10.0 | 8.3  | 1.7  | 25.5 | 13.8 | 26.0 | 26.3 | 0    | 187.2 | 15.6    |
| 71.....                               | do.....          | do.....                | 32.2 | 28.6 | 17.8 | 17.5 | 15.5 | 14.3 | 7.0  | 0    | 24.5 | 8.0  | 25.5 | 28.7 | 2.0  | 189.4 | 15.8    |
| 72.....                               | Fallow.....      | Fallowed.....          | 32.8 | 40.2 | 29.3 | 23.7 | 24.0 | 13.5 | 16.0 | 3.5  | 26.3 | 18.3 | 36.3 | 32.3 | 6.0  | 259.4 | 21.6    |
| 75.....                               | do.....          | do.....                | 35.7 | 42.9 | 30.0 | 24.5 | 28.0 | 15.0 | 12.8 | 5.0  | 34.5 | 19.3 | 28.2 | 34.7 | 13.3 | 288.2 | 24.0    |
| 76.....                               | Potatoes.....    | Disked.....            | 33.8 | 39.7 | 22.5 | 21.5 | 20.5 | 14.8 | 6.5  | 1.8  | 27.0 | 19.0 | 25.2 | 27.0 | 9.8  | 235.3 | 19.6    |
| 80.....                               | Corn.....        | do.....                | 28.0 | 35.0 | 14.2 | 12.8 | 16.2 | 10.1 | 3.3  | 0    | 20.7 | 15.0 | 20.8 | 20.7 | 1.2  | 170.0 | 14.2    |
| 247.....                              | Flax.....        | Spring plowed.....     | 26.7 | 28.8 | 19.5 | 12.8 | 13.2 | 6.2  | 4.2  | 0    | 20.2 |      |      |      |      | 104.9 | 13.1    |
| 570.....                              | Fallow.....      | Fallowed.....          | 31.5 | 44.8 | 25.2 | 17.3 | 23.0 | 12.7 | 17.8 | 9.2  | 28.3 | 17.0 | 29.8 | 34.2 | 11.0 | 270.3 | 22.5    |
| Average.....                          |                  |                        |      | 35.1 | 21.7 | 15.0 | 16.5 | 11.7 | 6.6  | 1.4  | 22.5 | 12.2 | 24.0 | 24.7 | 2.9  | 192.9 | 16.2    |
| DS A.....                             | Wheat.....       | Spring plowed.....     |      |      |      |      |      |      |      |      | 21.5 | 9.8  | 16.2 | 15.5 | .8   | 42.3  | 10.6    |
| DS B.....                             | do.....          | Fall plowed.....       |      |      |      |      |      |      |      |      | 11.3 | 7.5  | 14.7 | 12.5 | 0    | 34.7  | 8.7     |
| DS E.....                             | do.....          | Subsoiled.....         |      |      |      |      |      |      |      |      | 19.7 | 10.8 | 14.7 | 19.2 | 0    | 44.7  | 11.2    |
| DS F.....                             | do.....          | Fall listed.....       |      |      |      |      |      |      |      |      | 24.0 | 6.8  | 15.7 | 16.8 | 0    | 39.3  | 9.8     |
| Average.....                          |                  |                        |      |      |      |      |      |      |      |      |      | 8.7  | 15.3 | 16.0 | .2   | 40.3  | 10.1    |
| C or D.....                           | Fallow.....      | Fallowed.....          |      |      |      |      |      |      |      |      | 30.5 | 16.2 | 25.2 | 28.0 | 10.0 | 79.4  | 19.9    |

<sup>1</sup> Winter wheat yield not included in averages. Other yields are spring wheat, to which all other plots in this block were reseeded.

<sup>2</sup> Seeding delayed four weeks.



**CROP YIELDS AT THE MANDAN (N. DAK.) FIELD STATION—Continued**

TABLE 56.—Annual acre yields of specified crops grown in rotations on individual plots at Mandan, N. Dak., in one or more years from 1914 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method | 1914  | 1915  | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922  | 1923 | 1924 | 1925 | 1926 | Total | Average |
|---------------------------------------|---------------|----------------|-------|-------|------|------|------|------|------|------|-------|------|------|------|------|-------|---------|
| SPRING WHEAT—continued                |               |                |       |       |      |      |      |      |      |      |       |      |      |      |      |       |         |
| South field:                          |               |                |       |       |      |      |      |      |      |      |       |      |      |      |      |       |         |
| Aa-----                               | Wheat         | Spring plowed  | 39.7  | 22.3  | 15.5 | 7.3  | 0    | 6.3  | 0    | 0    | 17.5  | 5.0  | 13.3 | 10.0 | 0    | 104.2 | 8.7     |
| Ab-----                               | do            | do             | 27.0  | 27.1  | 15.3 | 10.5 | 0    | 8.1  | 0    | 0    | 21.7  | 7.7  | 19.0 | 11.0 | 0    | 120.4 | 10.0    |
| Ba-----                               | do            | Fall plowed    | 43.8  | 30.4  | 17.8 | 6.3  | 0    | 5.8  | 0    | 0    | 14.5  | 7.3  | 7.7  | 7.8  | 0    | 97.6  | 8.1     |
| Bb-----                               | do            | do             | 27.3  | 31.3  | 17.0 | 5.8  | 0    | 5.7  | 0    | 0    | 7.3   | 9.0  | 10.0 | 6.3  | 0    | 92.4  | 7.7     |
| Ea-----                               | do            | Subsoiled      | 30.5  | 24.8  | 15.5 | 6.0  | 0    | 4.7  | 0    | 0    | 24.3  | 8.8  | 9.0  | 7.5  | 0    | 100.6 | 8.4     |
| Eb-----                               | do            | do             | 26.3  | 25.6  | 16.0 | 7.3  | 0    | 6.7  | 0    | 0    | 16.5  | 10.5 | 10.7 | 8.3  | 0    | 101.6 | 8.5     |
| Fa-----                               | do            | Fall listed    | 40.0  | 25.3  | 17.5 | 5.8  | 0    | 7.0  | 3.8  | 0    | 23.3  | 8.3  | 9.5  | 10.8 | 0    | 111.3 | 9.3     |
| Fb-----                               | do            | do             | 25.0  | 29.3  | 18.0 | 8.0  | 0    | 7.0  | 2.8  | 0    | 14.8  | 9.2  | 13.3 | 9.3  | 0    | 111.7 | 9.0     |
| Average-----                          |               |                |       | 27.9  | 16.6 | 7.1  | 0    | 6.4  | .8   | 0    | 17.5  | 8.2  | 11.6 | 8.9  | 0    | 105.0 | 8.8     |
| Ca or Da-----                         | Fallow        | Fallowed       | 38.3  | 45.3  | 11.8 | 13.8 | 3.8  | 13.0 | 10.0 | 1.0  | 16.3  | 16.0 | 16.3 | 21.0 | 2.3  | 170.6 | 14.2    |
| Cb or Db-----                         | do            | do             | 26.2  | 41.0  | 12.7 | 15.7 | 9.2  | 15.3 | 10.0 | 0    | 17.8  | 16.0 | 19.8 | 21.7 | 5.3  | 184.5 | 15.4    |
| Average-----                          |               |                |       | 43.2  | 12.8 | 14.8 | 6.5  | 14.2 | 10.0 | .5   | 17.1  | 16.0 | 18.1 | 21.4 | 3.8  | 177.6 | 14.8    |
| 5a-----                               | Fallow        | Fallowed       | 25.8  | 43.3  | 19.2 | 12.3 | 5.2  | 15.5 | 6.3  | 0    | 19.2  | 12.8 | 19.7 | 14.2 | 5.2  | 172.9 | 14.4    |
| 5b-----                               | do            | do             | 25.2  | 41.2  | 18.3 | 13.0 | 6.5  | 13.5 | 7.3  | 0    | 17.2  | 13.8 | 17.7 | 18.0 | 3.7  | 170.2 | 14.1    |
| 8a-----                               | Oats          | Fall plowed    | 20.3  | 34.8  | 20.2 | 10.2 | 0    | 11.2 | 0    | 0    | 20.7  | 8.3  | 13.0 | 10.0 | 0    | 128.4 | 10.7    |
| 8b-----                               | do            | do             | 25.8  | 30.5  | 19.5 | 6.7  | 0    | 6.0  | 2.2  | 0    | 13.7  | 6.8  | 14.2 | 8.0  | 0    | 107.6 | 9.0     |
| Average-----                          |               |                |       | 37.5  | 19.3 | 10.6 | 2.9  | 11.6 | 4.0  | 0    | 17.7  | 10.4 | 16.2 | 12.6 | 2.2  | 144.8 | 12.1    |
| OATS                                  |               |                |       |       |      |      |      |      |      |      |       |      |      |      |      |       |         |
| Main field:                           |               |                |       |       |      |      |      |      |      |      |       |      |      |      |      |       |         |
| A-----                                | Oats          | Spring plowed  | 75.0  | 45.8  | 44.4 | 28.1 | 29.7 | 15.9 | 1.3  | 11.3 | 47.5  | 16.9 | 48.1 | 44.4 | 0    | 333.4 | 27.8    |
| B-----                                | do            | Fall plowed    | 77.8  | 59.8  | 57.5 | 23.1 | 25.0 | 10.3 | .9   | 0    | 29.1  | 11.6 | 37.8 | 42.5 | 0    | 297.6 | 24.8    |
| E-----                                | do            | Subsoiled      | 78.4  | 57.5  | 57.2 | 19.1 | 18.4 | 14.1 | 1.6  | 0    | 38.1  | 16.6 | 43.4 | 43.4 | 0    | 309.4 | 25.8    |
| F-----                                | do            | Fall listed    | 77.2  | 49.8  | 54.7 | 25.0 | 27.5 | 13.4 | 9.7  | 6.6  | 44.4  | 16.3 | 40.9 | 37.8 | 0    | 326.1 | 27.2    |
| Average-----                          |               |                |       | 53.2  | 53.5 | 23.8 | 25.2 | 13.4 | 3.4  | 4.5  | 39.8  | 15.4 | 42.6 | 42.0 | 0    | 316.6 | 26.4    |
| C or D-----                           | Fallow        | Fallowed       | 76.9  | 100.9 | 63.8 | 39.1 | 43.4 | 26.3 | 29.1 | 14.4 | 74.1  | 28.8 | 80.0 | 84.7 | 13.8 | 598.4 | 49.9    |
| 1a-----                               | Wheat         | Fall plowed    | 102.5 | 72.5  | 53.4 | 28.8 | 21.9 | 18.1 | 2.8  | 0    | 29.4  | 16.9 | 43.4 | 49.1 | 0    | 336.3 | 28.0    |
| 1b-----                               | do            | do             | 95.7  | 70.9  | 59.4 | 30.9 | 16.9 | 21.3 | 4.7  | 0    | 41.9  | 23.8 | 45.3 | 45.0 | 0    | 360.1 | 30.0    |
| 1c-----                               | do            | do             | 97.5  | 70.3  | 54.7 | 26.9 | 15.6 | 16.9 | 1.9  | 0    | 45.0  | 21.3 | 45.0 | 38.4 | 0    | 336.0 | 28.0    |
| 2a-----                               | do            | Spring plowed  | 100.0 | 69.4  | 55.9 | 28.4 | 37.2 | 24.1 | 2.5  | 17.2 | 64.1  | 25.0 | 51.6 | 46.9 | 0    | 422.3 | 35.2    |
| 2b-----                               | do            | do             | 99.1  | 64.2  | 53.8 | 30.6 | 30.3 | 24.1 | 12.2 | 11.6 | 70.6  | 26.9 | 55.9 | 44.1 | 2.2  | 426.5 | 35.5    |
| 2c-----                               | do            | do             | 98.1  | 49.4  | 49.1 | 25.3 | 32.2 | 22.5 | 11.3 | 12.2 | 63.8  | 29.4 | 50.0 | 47.8 | 1.9  | 394.9 | 32.9    |
| 3a-----                               | do            | Fall plowed    | 100.9 | 74.1  | 55.9 | 23.1 | 18.1 | 23.1 | 8.4  | 0    | 35.9  | 15.0 | 46.9 | 48.4 | 0    | 348.9 | 29.1    |
| 3b-----                               | do            | do             | 89.4  | 71.9  | 55.6 | 25.6 | 22.8 | 19.4 | 5.6  | 0    | 45.3  | 24.4 | 46.3 | 49.1 | 0    | 366.0 | 30.5    |
| 3c-----                               | do            | do             | 100.0 | 70.9  | 55.0 | 19.7 | 18.4 | 20.9 | 4.7  | 0    | 39.7  | 18.8 | 42.2 | 42.2 | 0    | 332.5 | 27.7    |
| 4a-----                               | Corn          | Disked         | 102.8 | 93.4  | 55.6 | 24.1 | 23.1 | 25.9 | 15.6 | 6.6  | 60.0  | 21.9 | 56.6 | 50.0 | 1.3  | 434.1 | 36.2    |
| 4b-----                               | do            | do             | 97.2  | 85.8  | 53.8 | 23.8 | 39.7 | 26.3 | 12.5 | 7.5  | 54.7  | 19.4 | 57.5 | 48.1 | 0    | 429.1 | 35.8    |
| 4c-----                               | do            | do             | 104.0 | 75.9  | 51.9 | 24.1 | 25.9 | 28.1 | 18.1 | 8.1  | 63.4  | 23.1 | 51.6 | 45.0 | 2.5  | 417.7 | 34.8    |
| 5a-----                               | Wheat         | Fall plowed    | 93.8  | 68.1  | 52.8 | 25.6 | 17.5 | 25.9 | 15.0 | 0    | 45.0  | 38.4 | 55.9 | 50.9 | 0    | 395.1 | 32.9    |
| 5b-----                               | do            | do             | 92.2  | 63.1  | 55.3 | 19.1 | 20.6 | 23.4 | 1.9  | 0    | 33.1  | 14.4 | 50.3 | 54.1 | 0    | 340.3 | 28.4    |
| 5c-----                               | do            | do             | 98.2  | 54.7  | 55.0 | 22.5 | 23.1 | 22.5 | 3.1  | 0    | 42.5  | 21.9 | 48.4 | 51.9 | 0    | 345.6 | 28.8    |
| 6a-----                               | Barley        | do             | 93.4  | 61.9  | 57.5 | 30.3 | 17.8 | 24.4 | 14.1 | 0    | 45.9  | 29.4 | 50.6 | 51.6 | 0    | 383.5 | 32.0    |
| 6b-----                               | do            | do             | 101.2 | 68.1  | 59.7 | 27.8 | 22.8 | 25.0 | 6.6  | 0    | 35.9  | 19.4 | 49.4 | 49.7 | 0    | 364.4 | 30.4    |
| 6c-----                               | do            | do             | 99.1  | 68.1  | 58.4 | 21.6 | 15.0 | 20.9 | 1.6  | 0    | 33.8  | 15.6 | 40.0 | 44.4 | 0    | 319.4 | 26.6    |
| 7a-----                               | Corn          | Spring plowed  | 95.0  | 78.1  | 57.2 | 31.3 | 27.5 | 26.6 | 21.3 | 8.1  | 62.8  | 29.1 | 55.9 | 60.3 | 3.1  | 461.3 | 38.4    |
| 7b-----                               | do            | do             | 94.6  | 64.9  | 53.1 | 29.1 | 34.1 | 27.8 | 18.4 | 9.7  | 58.1  | 36.3 | 50.6 | 50.9 | 4.7  | 437.7 | 36.5    |
| 7c-----                               | do            | do             | 94.7  | 65.6  | 49.4 | 28.8 | 37.5 | 21.9 | 15.6 | 10.6 | 55.6  | 30.6 | 50.0 | 45.9 | 7.5  | 419.0 | 34.9    |
| 8a-----                               | Fallow        | Fallowed       | 96.0  | 105.0 | 67.5 | 41.9 | 45.3 | 27.5 | 27.2 | 11.9 | 101.6 | 28.8 | 80.6 | 90.3 | 15.3 | 642.9 | 53.6    |
| 8b-----                               | do            | do             | 96.0  | 104.3 | 66.3 | 35.6 | 40.6 | 30.0 | 25.3 | 13.4 | 67.2  | 33.4 | 72.5 | 82.2 | 8.4  | 579.2 | 48.3    |
| 8c-----                               | do            | do             | 95.0  | 115.9 | 65.0 | 35.0 | 46.9 | 28.4 | 17.8 | 12.2 | 70.9  | 30.3 | 70.0 | 74.1 | 7.8  | 574.3 | 47.9    |
| 9a-----                               | Corn          | Spring plowed  | 95.0  | 82.5  | 49.7 | 25.6 | 32.8 | 21.6 | 15.3 | 10.6 | 55.6  | 30.9 | 58.1 | 49.7 | 4.7  | 437.1 | 36.4    |
| 9b-----                               | do            | do             | 97.2  | 72.5  | 50.0 | 24.7 | 36.9 | 26.6 | 11.6 | 10.9 | 54.7  | 26.6 | 54.4 | 49.4 | 4.1  | 422.4 | 35.2    |
| 9c-----                               | do            | do             | 97.5  | 72.3  | 52.8 | 29.4 | 33.1 | 24.7 | 22.5 | 10.3 | 59.7  | 36.3 | 55.6 | 51.3 | 4.4  | 452.4 | 37.7    |
| 10-----                               | Wheat         | do             | 96.6  | 55.0  | 54.7 | 23.4 | 21.6 | 25.9 | 7.8  | 10.0 | 56.3  | 25.0 | 51.6 | 42.2 | 1.9  | 378.4 | 31.5    |
| 14-----                               | Winter rye    | Green manured  | 88.4  | 63.6  | 58.8 | 41.2 | 24.7 | 19.4 | 14.4 | 6.6  | 35.0  | 21.3 | 68.1 | 65.3 | 8.1  | 426.5 | 35.5    |
| 15-----                               | Corn          | Disked         | 102.8 | 76.3  | 41.3 | 30.6 | 25.3 | 23.8 | 15.6 | 4.7  | 49.7  | 25.0 | 50.6 | 51.9 | 3.4  | 398.2 | 33.2    |
| 16-----                               | Peas          | Green manured  | 94.4  | 85.9  | 65.9 | 35.3 | 29.1 | 21.3 | 5.3  | 6.6  | 25.9  | 13.3 | 55.9 | 44.4 | 0    | 388.9 | 32.4    |
| 17-----                               | Corn          | Disked         | 103.4 | 78.4  | 44.1 | 33.8 | 27.8 | 23.4 | 10.9 | 5.3  | 61.6  | 22.8 | 51.9 | 62.8 | 3.4  | 426.2 | 35.5    |
| 18-----                               | do            | do             | 87.5  | 52.5  | 38.4 | 26.9 | 28.8 | 24.1 | 21.9 | 6.6  | 56.3  | 29.1 | 48.8 | 51.6 | 2.8  | 387.8 | 32.3    |
| 19-----                               | Fallow        | Fallowed       | 101.5 | 102.3 | 64.1 | 44.1 | 48.4 | 30.0 | 25.3 | 13.1 | 57.8  | 44.1 | 80.6 | 75.6 | 13.8 | 599.2 | 49.9    |
| 31-----                               | Sweetclover   | Green manured  | 94.8  | 56.1  | 79.7 | 33.8 | 22.8 | 22.5 | 13.1 | 7.8  | 27.5  | 22.8 | 59.1 | 53.8 | 0    | 399.0 | 33.3    |
| 32-----                               | Corn          | Disked         | 98.8  | 67.3  | 45.3 | 28.1 | 25.6 | 25.3 | 16.3 | 4.1  | 48.4  | 20.9 | 37.2 | 44.4 | 0    | 362.9 | 30.2    |
| 40-----                               | do            | do             | 96.8  | 62.1  | 45.0 | 25.9 | 25.6 | 20.0 | 11.9 | 7.8  | 53.4  | 21.9 | 50.6 | 47.5 | 0    | 371.7 | 31.0    |
| 41-----                               | Bromegrass    | Fall plowed    | 94.4  | 57.2  | 39.4 | 13.4 | 24.4 | 20.0 | 6.9  | 8.8  |       |      |      |      |      | 170.1 | 24.3    |
| 42-----                               | Alfalfa       | do             | 102.6 | 70.0  | 68.8 | 18.4 | 18.8 | 19.1 | 9.4  | 0    |       |      |      |      |      | 204.5 | 29.2    |
| 58-----                               | Sorgo         | Disked         | 101.6 | 53.4  | 50.9 | 26.9 | 25.0 | 25.6 | 20.0 | 7.2  | 55.6  | 24.1 | 49.1 | 50.9 | 0    | 388.7 | 32.4    |
| 69-----                               | Wheat         | Fall plowed    | 94.8  | 62.8  | 52.5 | 26.9 | 21.6 | 22.5 | 10.6 | 0    | 52.2  | 25.9 | 60.6 | 57.5 | 0    | 393.1 | 32.8    |
| 68-----                               | do            | do             | 97.8  | 53.6  | 59.7 | 26.3 | 17.8 | 22.5 | 9.1  | 0    | 55.3  | 23.1 | 57.8 | 34.4 | 0    | 359.6 | 30.0    |
| 70-----                               | do            | do             | 91.6  | 83.6  | 60.9 | 21.9 | 25.0 | 25.0 | 5.3  | 0    | 41.3  | 23.4 | 47.8 | 43.8 | 0    | 378.0 | 31.5    |
| 71-----                               | Fallow        | Fallowed       | 93.1  | 90.6  | 66.9 | 40.6 | 45.6 | 35.3 | 31.9 | 8.1  | 69.4  | 45.3 | 56.3 | 84.4 | 10.3 | 584.7 | 48.7    |
| 72-----                               | Corn          | Disked         | 100.0 | 55.6  | 35.9 | 27.8 | 25.6 | 24.4 | 16.3 | 5.6  | 59.7  | 21.3 | 57.5 | 62.5 | 0    | 292.2 | 32.7    |
| 75-----                               | Potatoes      | do             | 95.6  | 68.3  | 62.5 | 43.1 | 33.1 | 30.0 | 23.8 | 9.7  | 67.8  | 44.4 | 71.9 | 85.9 | 13.1 | 553.6 | 46.1    |
| 76-----                               | Fallow        | Fallowed       | 103.8 | 100.3 | 70.0 | 50.9 | 56.6 | 28.4 | 27.8 | 9.7  | 85.0  | 34.7 | 65.0 | 89.4 | 22.8 | 640.6 | 53.4    |
| 248-----                              | Flax          | Spring plowed  | 79.7  | 45.3  | 45.0 | 23.4 | 27.5 | 15.3 | 17.5 | 9.4  | 50.6  |      |      |      |      | 234.0 | 29.3    |
| Average-----                          |               |                |       | 72.1  | 55.3 | 28.8 | 28.2 | 24.0 | 13.3 | 6.1  | 53.2  | 26.1 | 54.6 | 54.6 | 32.8 | 408.7 | 34.7    |
| 243-----                              | Corn          | Disked         |       |       |      |      |      |      |      |      |       | 28.1 | 54.1 | 52.5 | 0    | 106.6 | 35.5    |
| 244-----                              | do            | do             |       |       |      |      |      |      |      |      |       | 16.3 | 52.5 | 49.4 | 0    | 101.9 | 34.0    |
| 270-----                              | Fallow        | Fallowed       |       |       |      |      |      |      |      |      |       | 19.4 | 56.6 | 80.0 | 5.0  | 141.6 | 47.2    |
| Average-----                          |               |                |       |       |      |      |      |      |      |      |       |      | 54.4 | 60.6 | 1.7  | 116.7 | 38.9    |
| South field:                          |               |                |       |       |      |      |      |      |      |      |       |      |      |      |      |       |         |
| Aa-----                               | Oats          | Spring plowed  | 90.0  | 64.4  | 61.3 | 20.3 | 0    | 26.9 | 2.5  | 5.0  | 58.4  | 14.7 | 35.9 | 24.7 | 0    | 314.1 | 26.2    |
| Ab-----                               | do            | do             | 80.6  | 61.3  | 51.3 | 14.4 | 0    | 22.2 | 0    | 3.1  | 45.3  | 5.0  | 36.3 | 21.3 | 0    | 260.2 | 21.7    |
| Ba-----                               | do            | Fall plowed    | 87.8  | 74.7  | 63.4 | 26.9 | 0    | 22.2 | 1.9  | 0    | 50.0  | 18.8 | 25.6 | 20.3 | 0    | 303.8 | 25.3    |
| Bb-----                               | do            | do             | 84.7  | 81.3  | 52.2 | 15.6 | 0    | 15.3 | 4.7  | 0    | 43.8  | 10.9 | 21.9 | 18.8 | 0    | 264.5 | 22.0    |



## CROP YIELDS AT THE MANDAN (N. DAK.) FIELD STATION—Continued

TABLE 56.—Annual acre yields of specified crops grown in rotations on individual plots at Mandan, N. Dak., in one or more years from 1914 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method     | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|---------------------------------------|---------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| OATS—CON.                             |               |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| South field—Continued.                |               |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Ea.....                               | Oats.....     | Subsoiled.....     | 93.1  | 63.1  | 59.1  | 21.3  | 0     | 24.4  | 3.4   | 0     | 58.4  | 22.2  | 33.1  | 28.4  | 0     | 319.4  | 26.6    |
| Eb.....                               | do.....       | do.....            | 94.1  | 68.4  | 60.3  | 24.7  | 0     | 21.6  | 0     | 0     | 45.0  | 14.4  | 22.2  | 20.0  | 0     | 276.6  | 23.1    |
| Fa.....                               | do.....       | Fall listed.....   | 94.1  | 81.3  | 61.6  | 23.4  | 0     | 30.6  | 13.1  | 0     | 54.7  | 15.0  | 34.1  | 27.5  | 0     | 341.3  | 28.4    |
| Fb.....                               | do.....       | do.....            | 93.7  | 75.8  | 51.6  | 20.0  | 0     | 19.4  | 10.9  | 3.4   | 56.3  | 15.6  | 28.4  | 22.5  | 0     | 303.9  | 25.3    |
| Average.....                          |               |                    |       | 72.0  | 57.6  | 20.8  | 0     | 22.8  | 4.6   | 1.4   | 51.5  | 14.6  | 29.7  | 22.9  | 0     | 298.0  | 24.8    |
| Ca or Da.....                         | Fallow.....   | Fallow.....        | 91.5  | 125.5 | 66.9  | 33.4  | 35.0  | 34.7  | 30.0  | 8.8   | 65.3  | 34.4  | 49.1  | 60.3  | 15.9  | 559.3  | 46.6    |
| Cb or Db.....                         | do.....       | do.....            | 88.2  | 124.4 | 67.8  | 38.4  | 19.1  | 37.5  | 27.8  | 10.3  | 47.2  | 33.4  | 38.8  | 56.3  | 6.6   | 507.6  | 42.3    |
| Average.....                          |               |                    |       | 124.9 | 67.3  | 35.9  | 27.0  | 36.1  | 28.9  | 9.6   | 56.3  | 33.9  | 44.0  | 58.3  | 11.3  | 533.5  | 44.5    |
| 5a.....                               | Wheat.....    | Fall plowed.....   | 98.1  | 85.2  | 60.0  | 18.8  | 0     | 20.9  | 2.8   | 3.1   | 41.3  | 14.7  | 27.2  | 18.8  | 0     | 292.8  | 24.4    |
| 5b.....                               | do.....       | do.....            | 78.1  | 65.3  | 42.2  | 23.8  | 0     | 21.9  | 5.3   | 4.4   | 50.0  | 12.5  | 31.3  | 20.3  | 0     | 277.0  | 23.1    |
| 8a.....                               | Fallow.....   | Fallow.....        | 99.7  | 127.3 | 57.8  | 27.5  | 32.8  | 31.3  | 24.7  | 5.0   | 52.2  | 26.6  | 53.8  | 47.2  | 11.6  | 497.8  | 41.5    |
| 8b.....                               | do.....       | do.....            | 81.6  | 118.1 | 60.0  | 28.1  | 23.1  | 26.9  | 24.4  | 7.2   | 39.7  | 26.3  | 44.7  | 46.6  | 6.9   | 452.0  | 37.7    |
| Average.....                          |               |                    |       | 99.0  | 55.0  | 24.5  | 14.0  | 25.3  | 14.3  | 4.9   | 45.8  | 20.0  | 39.3  | 33.2  | 4.6   | 379.9  | 31.7    |
| CORN—TOTAL                            |               |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Main field:                           |               |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed..... | 3,550 | 4,610 | 5,960 | 4,100 | 6,800 | 4,050 | 3,310 | 3,260 | 5,450 | 6,100 | 6,070 | 3,620 | 3,700 | 57,030 | 4,753   |
| B.....                                | do.....       | Fall plowed.....   | 3,450 | 4,050 | 6,960 | 3,600 | 6,150 | 3,700 | 3,470 | 2,840 | 4,900 | 6,950 | 6,060 | 3,630 | 3,870 | 56,180 | 4,682   |
| E.....                                | do.....       | Subsoiled.....     | 3,400 | 3,760 | 6,860 | 3,250 | 5,900 | 3,700 | 2,870 | 2,880 | 4,650 | 6,500 | 5,400 | 3,530 | 3,220 | 52,520 | 4,377   |
| F.....                                | do.....       | Spring listed..... | 4,250 | 3,820 | 5,960 | 4,000 | 4,400 | 3,500 | 3,160 | 2,980 | 4,100 | 3,950 | 4,800 | 3,180 | 2,800 | 46,650 | 3,888   |
| Average.....                          |               |                    |       | 4,060 | 6,435 | 3,738 | 5,813 | 3,738 | 3,203 | 2,990 | 4,775 | 5,875 | 5,583 | 3,490 | 3,398 | 53,095 | 4,425   |
| C or D.....                           | Fallow.....   | Fallow.....        | 3,650 | 3,780 | 5,100 | 4,060 | 6,400 | 3,800 | 6,750 | 3,970 | 5,700 | 7,450 | 6,480 | 3,160 | 5,200 | 61,790 | 5,149   |
| 1a.....                               | Oats.....     | Fall plowed.....   | 3,500 | 4,670 | 6,340 | 4,200 | 5,400 | 3,000 | 2,240 | 2,950 | 4,200 | 5,550 | 5,540 | 3,640 | 1,840 | 49,570 | 4,131   |
| 1b.....                               | do.....       | do.....            | 3,700 | 4,760 | 6,050 | 3,300 | 4,400 | 2,700 | 2,730 | 2,410 | 5,100 | 6,450 | 6,560 | 3,900 | 1,320 | 49,680 | 4,140   |
| 1c.....                               | do.....       | do.....            | 3,600 | 4,000 | 5,440 | 2,800 | 4,450 | 2,600 | 2,310 | 2,580 | 4,050 | 5,700 | 6,080 | 3,590 | 1,560 | 45,160 | 3,763   |
| 2a.....                               | do.....       | Spring plowed..... | 4,050 | 4,590 | 6,270 | 4,350 | 4,700 | 3,350 | 2,870 | 2,590 | 4,900 | 5,600 | 5,930 | 3,630 | 2,200 | 51,070 | 4,256   |
| 2b.....                               | do.....       | do.....            | 4,050 | 4,720 | 5,840 | 3,950 | 4,550 | 3,100 | 2,930 | 2,870 | 5,200 | 6,400 | 6,510 | 3,860 | 1,730 | 51,690 | 4,305   |
| 2c.....                               | do.....       | do.....            | 3,800 | 3,920 | 4,300 | 4,350 | 4,800 | 2,800 | 2,870 | 2,830 | 5,000 | 5,900 | 5,970 | 3,400 | 2,610 | 48,750 | 4,063   |
| 3a.....                               | do.....       | Fall plowed.....   | 3,800 | 4,770 | 6,270 | 2,850 | 3,850 | 2,950 | 2,150 | 2,280 | 3,800 | 4,950 | 5,920 | 3,270 | 1,830 | 44,890 | 3,741   |
| 3b.....                               | do.....       | do.....            | 3,150 | 4,720 | 5,990 | 3,050 | 4,000 | 2,800 | 2,360 | 2,250 | 4,000 | 6,200 | 6,860 | 3,450 | 1,960 | 47,640 | 3,970   |
| 3c.....                               | do.....       | do.....            | 3,600 | 3,920 | 4,510 | 2,400 | 4,650 | 2,400 | 2,390 | 2,240 | 3,900 | 5,900 | 5,630 | 3,220 | 1,870 | 43,030 | 3,586   |
| 4a.....                               | Wheat.....    | do.....            | 3,300 | 4,920 | 6,350 | 3,150 | 4,350 | 2,803 | 2,440 | 2,480 | 4,500 | 6,000 | 6,190 | 4,060 | 1,550 | 48,820 | 4,068   |
| 4b.....                               | do.....       | do.....            | 3,950 | 4,660 | 5,790 | 3,650 | 4,600 | 2,800 | 2,250 | 2,470 | 3,750 | 5,150 | 5,730 | 3,960 | 1,790 | 46,600 | 3,883   |
| 4c.....                               | do.....       | do.....            | 3,650 | 4,680 | 4,700 | 2,600 | 4,100 | 2,100 | 2,440 | 1,970 | 4,200 | 6,100 | 6,170 | 3,670 | 1,700 | 44,430 | 3,703   |
| 6a.....                               | Oats.....     | do.....            | 3,500 | 4,340 | 6,090 | 3,050 | 4,900 | 2,700 | 3,110 | 2,960 | 5,150 | 6,450 | 6,890 | 3,630 | 2,050 | 51,320 | 4,277   |
| 6b.....                               | do.....       | do.....            | 3,800 | 4,820 | 5,750 | 3,150 | 4,450 | 2,600 | 2,610 | 2,130 | 4,860 | 6,150 | 5,980 | 3,720 | 1,780 | 47,940 | 3,995   |
| 6c.....                               | do.....       | do.....            | 4,150 | 3,570 | 5,230 | 2,750 | 4,200 | 2,350 | 2,300 | 2,260 | 4,150 | 5,500 | 5,620 | 3,320 | 1,470 | 42,720 | 3,560   |
| 7a.....                               | Barley.....   | Spring plowed..... | 4,050 | 5,130 | 5,860 | 3,650 | 5,150 | 3,600 | 3,370 | 3,290 | 5,600 | 6,550 | 7,220 | 4,140 | 2,570 | 56,130 | 4,678   |
| 7b.....                               | do.....       | do.....            | 3,800 | 4,320 | 5,260 | 4,150 | 4,800 | 3,200 | 2,850 | 2,580 | 5,150 | 5,350 | 6,200 | 3,620 | 2,700 | 50,180 | 4,182   |
| 7c.....                               | do.....       | do.....            | 3,950 | 4,000 | 5,430 | 4,500 | 5,000 | 2,900 | 2,980 | 3,000 | 4,400 | 5,350 | 5,590 | 3,630 | 2,280 | 49,060 | 4,088   |
| 9a.....                               | Wheat.....    | do.....            | 3,700 | 4,340 | 5,620 | 3,650 | 4,600 | 3,250 | 3,180 | 2,580 | 4,650 | 6,250 | 6,560 | 3,630 | 2,650 | 50,960 | 4,247   |
| 9b.....                               | do.....       | do.....            | 4,250 | 4,210 | 5,080 | 3,950 | 4,800 | 3,300 | 2,690 | 2,460 | 4,550 | 4,900 | 6,020 | 3,400 | 1,960 | 47,320 | 3,943   |
| 9c.....                               | do.....       | do.....            | 3,700 | 4,220 | 4,130 | 3,960 | 5,650 | 2,700 | 2,610 | 2,870 | 4,750 | 6,150 | 6,630 | 3,850 | 2,150 | 49,610 | 4,134   |
| 13.....                               | Oats.....     | do.....            | 3,900 | 3,480 | 4,730 | 3,800 | 5,650 | 3,400 | 3,150 | 2,860 | 5,100 | 5,950 | 6,630 | 3,960 | 1,830 | 50,540 | 4,212   |
| 14.....                               | do.....       | do.....            | 3,500 | 4,420 | 4,610 | 4,250 | 4,950 | 3,100 | 2,650 | 2,880 | 4,800 | 5,600 | 6,660 | 4,050 | 2,190 | 50,160 | 4,180   |
| 15.....                               | Wheat.....    | do.....            | 4,050 | 3,600 | 5,130 | 3,300 | 4,850 | 3,250 | 2,630 | 2,860 | 4,800 | 5,450 | 6,860 | 4,000 | 2,100 | 48,830 | 4,069   |
| 16.....                               | Oats.....     | do.....            | 3,250 | 4,830 | 5,070 | 3,100 | 4,600 | 3,400 | 2,670 | 3,300 | 4,800 | 5,300 | 7,010 | 4,000 | 1,690 | 49,770 | 4,148   |
| 17.....                               | Wheat.....    | do.....            | 3,600 | 3,990 | 5,130 | 3,950 | 5,050 | 3,050 | 2,490 | 3,930 | 5,200 | 5,950 | 7,500 | 4,450 | 1,830 | 52,520 | 4,377   |
| 18.....                               | do.....       | do.....            | 3,000 | 3,650 | 4,430 | 4,050 | 5,500 | 3,300 | 3,120 | 3,510 | 5,000 | 6,250 | 6,960 | 3,670 | 2,510 | 51,950 | 4,329   |
| 19.....                               | Oats.....     | do.....            | 4,090 | 4,020 | 4,530 | 4,250 | 4,850 | 3,350 | 2,950 | 3,460 | 5,200 | 6,650 | 7,110 | 4,260 | 2,510 | 52,140 | 4,345   |
| 31.....                               | do.....       | do.....            | 3,450 | 4,200 | 5,820 | 4,000 | 3,550 | 3,300 | 2,680 | 3,460 | 4,800 | 5,600 | 6,800 | 4,440 | 2,010 | 50,660 | 4,222   |
| 32.....                               | Wheat.....    | do.....            | 3,650 | 4,370 | 6,180 | 3,150 | 4,350 | 3,250 | 2,690 | 3,020 | 5,000 | 5,800 | 7,300 | 4,420 | 1,790 | 51,320 | 4,277   |
| 40.....                               | Oats.....     | Fall plowed.....   | 3,290 | 3,650 | 5,460 | 2,750 | 5,100 | 2,650 | 2,850 | 2,310 | 4,800 | 6,150 | 5,870 | 3,760 | 1,870 | 46,520 | 3,877   |
| 41.....                               | do.....       | Spring plowed..... | 2,953 | 3,480 | 3,450 | 2,750 | 3,100 | 2,750 | 3,240 | 3,310 | 5,500 | 6,100 | 7,150 | 3,900 | 2,240 | 46,970 | 3,914   |
| 42.....                               | do.....       | do.....            | 3,050 | 4,700 | 5,500 | 3,700 | 4,150 | 3,200 | 3,000 | 3,530 | 4,500 | 7,250 | 7,100 | 4,060 | 1,980 | 52,700 | 4,392   |
| 68.....                               | Wheat.....    | Fall plowed.....   | 3,300 | 3,590 | 5,020 | 2,450 | 4,050 | 2,300 | 2,000 | 2,110 | 4,100 | 5,850 | 6,160 | 3,770 | 1,830 | 43,230 | 3,603   |
| 69.....                               | Oats.....     | Spring plowed..... | 3,350 | 5,190 | 6,500 | 3,750 | 5,700 | 2,800 | 3,700 | 3,610 | 6,000 | 6,800 | 9,150 | 4,700 | 2,210 | 60,140 | 5,012   |
| 70.....                               | do.....       | do.....            | 3,290 | 4,810 | 5,320 | 3,500 | 4,050 | 3,150 | 3,570 | 3,160 | 5,400 | 6,550 | 8,160 | 3,960 | 1,550 | 53,180 | 4,432   |
| 71.....                               | do.....       | do.....            | 3,400 | 3,340 | 4,990 | 3,450 | 5,050 | 3,750 | 2,200 | 3,100 | 5,200 | 6,200 | 7,600 | 4,390 | 2,150 | 51,420 | 4,285   |
| 72.....                               | do.....       | do.....            | 3,400 | 4,120 | 4,920 | 3,600 | 5,000 | 3,500 | 2,790 | 2,870 | 5,500 | 5,700 | 7,460 | 4,800 | 2,010 | 52,270 | 4,356   |
| 86.....                               | Wheat.....    | do.....            | 3,250 | 3,440 | 4,570 | 3,200 | 5,050 | 3,200 | 3,150 | 2,490 | 4,900 | 6,000 | 8,010 | 5,280 | 2,050 | 51,340 | 4,278   |
| 243.....                              | Barley.....   | do.....            | 4,050 | 4,200 | 5,170 | 3,800 | 5,100 | 2,650 | 2,300 | 3,140 | 6,100 | 5,800 | 8,880 | 3,820 | 2,460 | 50,420 | 4,202   |
| 244.....                              | Wheat.....    | Fall plowed.....   | 4,500 | 4,140 | 4,660 | 2,500 | 4,250 | 3,350 | 1,850 | 1,900 | 4,350 | 5,500 | 7,510 | 3,960 | 1,500 | 45,470 | 3,789   |
| 245.....                              | Flax.....     | Spring plowed..... | 3,100 | 3,860 |       |       |       |       |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE MANDAN (N. DAK.) FIELD STATION—Continued

TABLE 56.—Annual acre yields of specified crops grown in rotations on individual plots at Mandan, N. Dak., in one or more years from 1914 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method     | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|---------------------------------------|---------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| CORN GRAIN                            |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Main field:                           |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Corn.....     | Spring plowed..... | 27.3 | 29.6 | 39.8 | 26.7 | 45.7 | 23.6 | 11.4 | 22.3 | 39.6 | 49.4 | 46.6 | 30.4 | 28.4 | 398.5 | 33.2    |
| B.....                                | do.....       | Fall plowed.....   | 26.9 | 26.7 | 49.1 | 21.0 | 44.9 | 26.9 | 7.9  | 22.1 | 36.6 | 55.1 | 47.1 | 28.3 | 31.3 | 397.0 | 33.1    |
| E.....                                | do.....       | Subsoiled.....     | 26.9 | 24.8 | 44.5 | 18.7 | 45.6 | 29.3 | 10.1 | 20.9 | 35.6 | 49.9 | 42.4 | 28.4 | 31.3 | 381.5 | 31.8    |
| F.....                                | do.....       | Spring listed..... | 35.0 | 27.8 | 36.6 | 27.6 | 37.0 | 27.1 | 14.7 | 18.6 | 31.6 | 35.7 | 40.0 | 21.9 | 26.1 | 344.7 | 28.7    |
| Average.....                          |               |                    |      | 27.2 | 42.5 | 23.5 | 43.3 | 28.0 | 11.0 | 21.0 | 35.9 | 47.5 | 44.0 | 27.3 | 29.3 | 380.4 | 31.7    |
| C or D.....                           | Fallow.....   | Fallow.....        | 27.7 | 25.7 | 34.9 | 28.1 | 46.6 | 30.6 | 24.3 | 35.3 | 40.6 | 62.3 | 49.7 | 26.9 | 41.1 | 446.1 | 37.2    |
| 1a.....                               | Oats.....     | Fall plowed.....   | 24.4 | 27.7 | 36.3 | 25.6 | 37.4 | 21.7 | 2.9  | 13.6 | 26.4 | 43.9 | 38.4 | 26.4 | 10.7 | 311.0 | 25.9    |
| 1b.....                               | do.....       | do.....            | 27.4 | 29.7 | 45.3 | 18.9 | 31.9 | 17.9 | 7.3  | 14.3 | 34.9 | 52.3 | 47.1 | 27.9 | 10.0 | 337.5 | 28.1    |
| 1c.....                               | do.....       | do.....            | 25.6 | 28.3 | 41.8 | 13.7 | 31.9 | 18.7 | 3.0  | 14.7 | 26.7 | 47.7 | 44.6 | 26.3 | 9.4  | 306.8 | 25.6    |
| 2a.....                               | do.....       | Spring plowed..... | 27.7 | 30.5 | 43.5 | 29.4 | 38.1 | 26.6 | 7.3  | 16.4 | 35.9 | 46.9 | 45.1 | 27.4 | 17.0 | 364.1 | 30.3    |
| 2b.....                               | do.....       | do.....            | 27.1 | 29.2 | 41.0 | 25.3 | 39.0 | 22.9 | 8.7  | 19.9 | 36.7 | 53.6 | 47.4 | 29.3 | 15.4 | 368.4 | 30.7    |
| 2c.....                               | do.....       | do.....            | 27.0 | 27.8 | 35.4 | 30.6 | 35.4 | 25.1 | 8.3  | 16.1 | 37.1 | 50.7 | 45.4 | 26.7 | 16.6 | 355.2 | 29.6    |
| 3a.....                               | do.....       | Fall plowed.....   | 29.3 | 30.9 | 42.9 | 17.7 | 30.3 | 23.4 | 3.4  | 12.1 | 25.7 | 42.0 | 40.6 | 23.9 | 11.1 | 304.0 | 25.3    |
| 3b.....                               | do.....       | do.....            | 23.6 | 29.4 | 41.5 | 20.0 | 35.0 | 20.6 | 3.3  | 15.0 | 27.6 | 51.7 | 46.9 | 24.9 | 15.7 | 331.6 | 27.6    |
| 3c.....                               | do.....       | do.....            | 23.1 | 24.2 | 39.8 | 11.4 | 33.0 | 18.7 | 2.3  | 13.4 | 25.9 | 50.4 | 44.6 | 24.9 | 12.4 | 301.0 | 25.1    |
| 4a.....                               | Wheat.....    | do.....            | 21.3 | 32.6 | 44.6 | 14.6 | 33.3 | 21.1 | 4.9  | 14.3 | 28.7 | 48.3 | 43.3 | 29.3 | 9.6  | 324.6 | 27.1    |
| 4b.....                               | do.....       | do.....            | 28.9 | 29.8 | 41.1 | 20.9 | 33.6 | 19.4 | 1.9  | 8.3  | 23.6 | 48.9 | 39.4 | 26.7 | 9.7  | 308.3 | 25.3    |
| 4c.....                               | do.....       | do.....            | 29.0 | 27.5 | 40.0 | 12.9 | 31.6 | 17.6 | 3.1  | 11.3 | 27.0 | 51.6 | 46.4 | 27.9 | 12.3 | 309.2 | 25.8    |
| 6a.....                               | Oats.....     | do.....            | 22.6 | 26.9 | 41.3 | 21.3 | 37.6 | 22.3 | 8.0  | 17.9 | 33.9 | 50.1 | 49.6 | 28.4 | 16.1 | 353.4 | 29.5    |
| 6b.....                               | do.....       | do.....            | 25.6 | 29.3 | 40.4 | 20.0 | 31.6 | 21.1 | 5.1  | 9.3  | 28.9 | 53.0 | 44.9 | 26.7 | 13.7 | 324.0 | 27.0    |
| 6c.....                               | do.....       | do.....            | 29.9 | 25.9 | 41.9 | 15.3 | 31.4 | 16.3 | 3.1  | 9.1  | 26.3 | 45.0 | 40.9 | 24.7 | 8.9  | 288.8 | 24.1    |
| 7a.....                               | Barley.....   | Spring plowed..... | 23.7 | 30.7 | 39.3 | 22.1 | 39.9 | 24.3 | 9.7  | 21.3 | 38.0 | 52.4 | 51.9 | 28.4 | 17.0 | 375.0 | 31.3    |
| 7b.....                               | do.....       | do.....            | 26.3 | 27.8 | 39.4 | 26.1 | 36.6 | 26.7 | 10.3 | 14.7 | 39.0 | 47.9 | 47.6 | 27.9 | 19.7 | 364.5 | 30.4    |
| 7c.....                               | do.....       | do.....            | 31.9 | 28.3 | 42.3 | 27.9 | 38.0 | 24.4 | 8.1  | 16.7 | 32.1 | 46.0 | 43.9 | 27.9 | 17.1 | 352.7 | 29.4    |
| 9a.....                               | Wheat.....    | Spring plowed..... | 28.7 | 26.9 | 38.4 | 23.6 | 35.7 | 25.1 | 10.1 | 13.0 | 33.3 | 52.3 | 47.1 | 27.4 | 19.3 | 352.2 | 29.4    |
| 9b.....                               | do.....       | do.....            | 27.9 | 28.1 | 37.8 | 23.9 | 33.0 | 25.7 | 6.9  | 12.1 | 30.4 | 45.4 | 45.7 | 24.9 | 15.1 | 329.0 | 27.4    |
| 9c.....                               | do.....       | do.....            | 26.9 | 27.6 | 36.9 | 23.6 | 39.0 | 22.0 | 8.0  | 19.1 | 36.3 | 52.4 | 50.4 | 24.4 | 15.6 | 362.3 | 30.2    |
| 13.....                               | Oats.....     | do.....            | 27.9 | 24.0 | 36.9 | 23.9 | 38.7 | 27.1 | 7.0  | 17.6 | 35.0 | 51.7 | 50.0 | 25.6 | 12.3 | 349.8 | 29.2    |
| 14.....                               | do.....       | do.....            | 28.4 | 27.7 | 34.1 | 27.3 | 39.0 | 23.3 | 5.0  | 17.7 | 35.0 | 44.7 | 52.4 | 29.4 | 17.0 | 352.6 | 29.4    |
| 15.....                               | Wheat.....    | do.....            | 32.1 | 23.3 | 37.0 | 20.4 | 36.1 | 24.7 | 4.0  | 17.6 | 35.3 | 47.3 | 52.9 | 29.4 | 16.6 | 344.6 | 28.7    |
| 16.....                               | Oats.....     | do.....            | 24.3 | 27.5 | 38.4 | 18.3 | 32.9 | 26.9 | 5.1  | 20.1 | 32.7 | 43.0 | 52.7 | 28.6 | 12.9 | 339.1 | 28.3    |
| 17.....                               | Wheat.....    | do.....            | 28.0 | 25.2 | 37.4 | 24.1 | 36.4 | 22.3 | 3.6  | 24.1 | 35.7 | 48.7 | 53.6 | 32.3 | 15.7 | 359.1 | 29.9    |
| 18.....                               | do.....       | do.....            | 21.9 | 23.3 | 32.5 | 27.6 | 37.3 | 25.7 | 11.6 | 21.6 | 34.6 | 51.3 | 52.3 | 29.3 | 19.9 | 367.0 | 30.6    |
| 19.....                               | Oats.....     | do.....            | 28.9 | 24.5 | 32.0 | 30.4 | 33.6 | 27.7 | 10.3 | 21.3 | 37.9 | 46.9 | 52.9 | 31.7 | 20.0 | 369.2 | 30.8    |
| 31.....                               | do.....       | do.....            | 24.9 | 25.0 | 43.1 | 25.7 | 28.1 | 25.1 | 4.9  | 21.3 | 34.4 | 48.3 | 53.4 | 32.4 | 13.7 | 355.4 | 29.6    |
| 32.....                               | Wheat.....    | do.....            | 26.4 | 26.0 | 42.1 | 18.1 | 31.1 | 25.0 | 4.7  | 18.6 | 34.4 | 50.0 | 53.4 | 31.0 | 12.3 | 346.7 | 28.9    |
| 40.....                               | Oats.....     | Fall plowed.....   | 23.4 | 20.0 | 38.6 | 10.0 | 34.4 | 18.6 | 4.0  | 14.6 | 32.4 | 48.4 | 46.0 | 29.4 | 13.9 | 310.3 | 25.9    |
| 41.....                               | do.....       | Spring plowed..... | 21.9 | 23.9 | 25.0 | 18.6 | 29.1 | 20.9 | 8.0  | 20.9 | 36.4 | 51.0 | 53.9 | 29.1 | 17.1 | 333.9 | 27.8    |
| 42.....                               | do.....       | do.....            | 24.9 | 28.3 | 40.8 | 21.3 | 33.0 | 24.4 | 4.1  | 21.3 | 32.0 | 56.6 | 53.4 | 28.4 | 14.1 | 357.7 | 29.8    |
| 49.....                               | Wheat.....    | Fall plowed.....   | 25.4 | 25.2 | 38.8 | 15.4 | 31.7 | 19.0 | 2.3  | 13.3 | 26.9 | 48.7 | 47.3 | 26.6 | 12.7 | 307.9 | 25.7    |
| 68.....                               | Oats.....     | Spring plowed..... | 24.9 | 32.0 | 40.4 | 22.0 | 40.6 | 21.4 | 6.4  | 20.3 | 36.4 | 47.1 | 59.0 | 29.3 | 14.7 | 369.6 | 30.8    |
| 69.....                               | do.....       | do.....            | 22.6 | 23.5 | 37.6 | 19.7 | 34.6 | 22.0 | 6.7  | 18.4 | 34.4 | 52.7 | 57.6 | 27.6 | 11.1 | 348.9 | 29.1    |
| 70.....                               | do.....       | do.....            | 23.1 | 22.0 | 36.0 | 17.3 | 36.1 | 27.4 | 4.9  | 17.7 | 35.9 | 49.7 | 52.9 | 26.4 | 12.4 | 338.7 | 28.2    |
| 71.....                               | do.....       | do.....            | 25.7 | 24.5 | 38.4 | 23.4 | 34.4 | 26.6 | 7.0  | 19.6 | 36.6 | 46.0 | 57.3 | 37.1 | 15.4 | 366.3 | 30.5    |
| 72.....                               | Wheat.....    | do.....            | 24.6 | 22.0 | 33.3 | 20.0 | 36.6 | 25.1 | 6.7  | 17.0 | 34.3 | 51.1 | 57.4 | 37.1 | 15.1 | 355.7 | 29.6    |
| 86.....                               | Barley.....   | do.....            | 31.0 | 25.0 | 38.3 | 23.1 | 36.9 | 21.6 | 1.0  | 19.3 | 41.3 | 48.3 | 55.4 | 27.0 | 21.1 | 348.3 | 29.0    |
| 243.....                              | Wheat.....    | Fall plowed.....   | 35.3 | 25.5 | 34.1 | 16.1 | 34.1 | 24.3 | .4   | 9.9  | 32.9 | 45.9 | 52.6 | 26.3 | 12.3 | 314.4 | 26.2    |
| 244.....                              | Flax.....     | Spring plowed..... | 24.9 | 22.9 | 34.5 | 17.7 | 39.7 | 24.3 | 8.4  | 20.3 | 36.9 | 49.0 | 45.4 | 29.4 | 17.7 | 346.2 | 28.9    |
| 245.....                              | do.....       | Fall plowed.....   | 23.0 | 16.0 | 35.5 | 8.9  | 32.7 | 19.9 | .4   | 16.3 | 28.1 | 46.0 | 49.7 | 23.7 | 15.1 | 292.3 | 24.4    |
| 246.....                              | Corn.....     | Spring plowed..... | 26.1 | 27.6 | 36.0 | 21.7 | 44.7 | 31.6 | 7.9  | 17.0 | 43.4 | 51.4 | 50.4 | 24.9 | 21.0 | 363.3 | 31.1    |
|                                       | Flax.....     | do.....            | 30.7 | 33.5 | 41.9 | 16.1 | 40.4 | 27.0 | 4.6  | 15.1 | 31.1 | 54.9 | 46.4 | 28.9 | 15.7 | 355.6 | 29.6    |
| Average.....                          |               |                    |      | 26.7 | 38.5 | 20.7 | 35.2 | 23.2 | 5.7  | 16.5 | 33.1 | 49.2 | 48.7 | 28.2 | 14.9 | 335.2 | 28.5    |
| South field:                          |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Aa.....                               | Corn.....     | Spring plowed..... | 34.0 | 29.7 | 22.3 | 5.1  | 25.3 | 24.6 | 7.1  | 5.4  | 18.4 | 38.1 | 35.3 | 18.1 | 10.1 | 239.5 | 20.0    |
| Ab.....                               | do.....       | do.....            | 34.7 | 30.1 | 26.8 | 5.7  | 23.4 | 27.4 | 5.1  | 3.6  | 18.3 | 38.7 | 34.3 | 21.7 | 9.6  | 244.7 | 20.4    |
| Ba.....                               | do.....       | Fall plowed.....   | 37.3 | 28.6 | 28.9 | 12.6 | 24.4 | 21.0 | 1.9  | 6.9  | 20.0 | 40.7 | 32.0 | 20.7 | 7.6  | 245.3 | 20.4    |
| Bb.....                               | do.....       | do.....            | 41.3 | 29.2 | 35.0 | 20.6 | 23.9 | 25.4 | 4.4  | 5.7  | 25.4 | 43.1 | 32.4 | 21.0 | 7.9  | 274.0 | 22.8    |
| Ea.....                               | do.....       | Subsoiled.....     | 25.9 | 20.0 | 33.8 | 12.0 | 23.3 | 26.1 | 6.1  | 7.1  | 23.6 | 51.1 | 33.7 | 22.6 | 9.4  | 268.8 | 22.1    |
| Eb.....                               | do.....       | do.....            | 37.1 | 26.3 | 34.1 | 20.9 | 23.0 | 25.0 | 7.9  | 5.0  | 26.9 | 43.7 | 35.3 | 19.7 | 7.9  | 275.7 | 23.0    |
| Fa.....                               | do.....       | Spring listed..... | 34.0 | 24.4 | 28.7 | 5.9  | 22.6 | 25.6 | 5.4  | 5.4  | 18.0 | 39.0 | 36.3 | 21.3 | 9.7  | 242.3 | 20.2    |
| Fb.....                               | do.....       | do.....            | 43.7 | 31.4 | 21.3 | 3.4  | 21.0 | 23.0 | 10.4 | 8.0  | 15.3 | 35.0 | 32.9 | 18.4 | 8.1  | 228.2 | 19.0    |
| Average.....                          |               |                    |      | 27.5 | 28.9 | 10.8 | 23.4 | 24.8 | 6.0  | 5.9  | 20.7 | 41.2 | 34.0 | 20.4 | 8.8  | 252.3 | 21.0    |
| Ca or Da.....                         |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Cb or Db.....                         | Fallow.....   | Fallow.....        | 32.6 | 30.4 | 16.3 | 23.3 | 23.9 | 28.3 | 16.1 | 19.9 | 31.4 | 57.6 | 43.6 | 25.1 | 27.4 | 343.3 | 28.6    |
|                                       | do.....       | do.....            | 40.6 | 32.2 | 37.3 | 21.3 | 25.3 | 26.6 | 15.4 | 18.0 | 29.1 | 50.6 | 40.3 | 24.0 | 18.3 | 338.4 | 28.2    |
| Average.....                          |               |                    |      | 31.3 | 26.8 | 22.3 | 24.6 | 27.5 | 15.8 | 19.0 | 30.3 | 54.1 | 42.0 | 24.6 | 22.9 | 340.9 | 28.4    |
| BARLEY                                |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Main field:                           |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Barley.....   | Spring plowed..... | 54.1 | 42.6 | 24.8 | 17.9 | 20.8 | 9.0  | 0    | 0    | 36.0 | 12.7 | 31.9 | 22.7 | 0    | 218.4 | 18.2    |
| B.....                                | do.....       | Fall plowed.....   | 54.1 | 57.0 | 26.7 | 19.6 | 31.3 | 10.2 | 0    | 0    | 47.1 | 25.4 | 32.5 | 28.3 | 0    | 278.1 | 23.2    |
| E.....                                | do.....       | Subsoiled.....     | 55.0 | 49.7 | 29.2 | 9.6  | 10.4 | 8.1  | 0    | 0    | 23.3 | 17.9 | 26.7 | 28.5 | 0    | 203.4 | 17.0    |
| F.....                                | do.....       | Fall listed.....   | 55.6 | 49.8 | 30.4 | 15.6 | 21.7 | 5.0  | 3.3  | 0    | 31.7 | 13   |      |      |      |       |         |

## CROP YIELDS AT THE MANDAN (N. DAK.) FIELD STATION—Continued

TABLE 56.—Annual acre yields of specified crops grown in rotations on individual plots at Mandan, N. Dak., in one or more years from 1914 to 1926—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method | 1914   | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total   | Average |
|---------------------------------------|---------------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|---------|
| <b>BARLEY—Con.</b>                    |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| <b>South field:</b>                   |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| Aa.....                               | Barley        | Spring plowed  | 46.6   | 50.5  | 24.8  | 7.7   | 0     | 6.5   | 0     | 0     | 27.3  | 12.3  | 17.1  | 15.0  | 0     | 161.2   | 13.4    |
| Ab.....                               | do.           | do.            | 41.5   | 50.1  | 17.1  | 1.9   | 0     | 0     | 0     | 0     | 23.8  | 9.8   | 22.1  | 9.4   | 0     | 134.2   | 11.2    |
| Ba.....                               | do.           | Fall plowed    | 47.3   | 58.3  | 28.5  | 4.6   | 0     | 4.0   | 0     | 0     | 8.8   | 12.3  | 4.8   | 6.9   | 0     | 128.2   | 10.7    |
| Bb.....                               | do.           | do.            | 46.2   | 52.7  | 24.0  | .8    | 0     | 0     | 0     | 0     | 5.4   | 4.8   | 4.4   | 5.8   | 0     | 97.9    | 8.2     |
| Ea.....                               | do.           | Subsoiled      | 45.4   | 50.8  | 26.5  | 4.2   | 0     | 5.4   | 0     | 0     | 13.1  | 15.2  | 7.5   | 8.8   | 0     | 131.5   | 11.0    |
| Eb.....                               | do.           | do.            | 50.0   | 54.3  | 27.3  | 4.6   | 0     | 0     | 0     | 0     | 24.2  | 12.9  | 7.9   | 8.3   | 0     | 139.5   | 11.6    |
| Fa.....                               | do.           | Fall listed    | 47.5   | 53.8  | 30.6  | 5.6   | 0     | 13.8  | 5.8   | 0     | 27.3  | 12.1  | 14.0  | 13.1  | 0     | 176.1   | 14.7    |
| Fb.....                               | do.           | do.            | 52.1   | 59.8  | 29.4  | 3.5   | 0     | 0     | 3.5   | 0     | 34.2  | 11.0  | 11.3  | 14.8  | 0     | 167.5   | 14.0    |
| Average.....                          |               |                |        | 53.8  | 26.0  | 4.1   | 0     | 3.7   | 1.2   | 0     | 20.5  | 11.3  | 11.1  | 10.3  | 0     | 142.0   | 11.9    |
| Ca or Da.....                         | Fallow        | Fallowed       | 45.4   | 55.6  | 29.6  | 9.2   | 18.1  | 16.9  | 18.1  | 0     | 32.9  | 23.5  | 22.9  | 27.5  | 0     | 254.3   | 21.2    |
| Cb or Db.....                         | do.           | do.            | 50.6   | 60.7  | 28.8  | 9.4   | 12.5  | 16.7  | 0     | 0     | 16.5  | 18.3  | 17.1  | 28.1  | 0     | 208.1   | 17.3    |
| Average.....                          |               |                |        | 58.2  | 29.2  | 9.3   | 15.3  | 16.8  | 9.1   | 0     | 24.7  | 20.9  | 20.0  | 27.8  | 0     | 231.2   | 19.3    |
| <b>FLAX</b>                           |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| A.....                                | Flax          | Spring plowed  | 14.3   | 13.4  | 5.0   | 0     | 0     | 0     | 0     | 0     |       |       |       |       |       | 18.4    | 2.6     |
| B.....                                | do.           | Fall plowed    | 12.9   | 13.0  | 5.2   | 0     | 0     | 0     | 0     | 0     |       |       |       |       |       | 18.2    | 2.6     |
| E.....                                | do.           | Subsoiled      | 15.7   | 14.8  | 7.0   | 0     | 0     | 0     | 0     | 0     |       |       |       |       |       | 21.8    | 3.1     |
| F.....                                | do.           | Fall listed    | 15.9   | 13.2  | 6.1   | 0     | 0     | 0     | 0     | 0     |       |       |       |       |       | 19.3    | 2.8     |
| Average.....                          |               |                |        | 13.6  | 5.8   | 0     | 0     | 0     | 0     | 0     |       |       |       |       |       | 19.4    | 2.8     |
| C or D.....                           | Fallow        | Fallowed       | 14.3   | 17.1  | 10.4  | 1.3   | 0     | 1.3   | 0     | 0     |       |       |       |       |       | 30.1    | 4.3     |
| 86.....                               | Corn          | Spring plowed  | 15.7   | 23.6  | 16.1  | 6.3   | 3.2   | 0     | .9    | 0     | 5.0   | 8.4   | 2.7   | 0     | 0     | 66.2    | 5.5     |
| 243.....                              | do.           | do.            | 12.5   | 14.3  | 11.8  | 2.5   | 0     | .9    | .7    | 0     | 3.0   |       |       |       |       | 33.2    | 4.2     |
| 244.....                              | do.           | Fall plowed    | 11.8   | 12.0  | 12.0  | 2.3   | 0     | 1.3   | 0     | 0     | 1.4   |       |       |       |       | 29.0    | 3.6     |
| 245.....                              | do.           | Disked         | 14.8   | 14.3  | 14.6  | 4.5   | 0     | 2.7   | 0     | 0     | 5.7   |       |       |       |       | 41.8    | 5.2     |
| 246.....                              | do.           | do.            | 15.7   | 23.0  | 15.0  | 3.8   | 0     | 2.5   | 0     | 0     | 5.5   |       |       |       |       | 49.8    | 6.2     |
| 247.....                              | Wheat         | Spring plowed  | 12.5   | 18.2  | 11.1  | 4.1   | 0     | 0     | 0     | 0     | 2.5   |       |       |       |       | 35.9    | 4.5     |
| 248.....                              | Oats          | do.            | 10.9   | 15.5  | 10.2  | 3.2   | 0     | 0     | 0     | 0     | 2.0   |       |       |       |       | 30.9    | 3.9     |
| 41.....                               | Brome-grass   | Fall plowed    |        |       |       |       |       |       |       |       | 2.5   | 12.9  | 8.9   | 0     | 3.6   | 25.4    | 6.4     |
| 42.....                               | Alfalfa       | do.            |        |       |       |       |       |       |       |       | 1.6   | 14.3  | 3.0   | 0     | 0     | 17.3    | 4.3     |
| Average.....                          |               |                |        | 17.3  | 13.0  | 3.8   | .5    | 1.1   | .2    | 0     | 3.6   | 11.9  | 4.9   | 0     | 1.2   | 36.6    | 4.9     |
| <b>WINTER RYE</b>                     |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| A.....                                | Winter rye    | Fall plowed    |        |       |       |       |       |       |       |       |       | 9.1   | 14.1  | 11.4  | .9    | 26.4    | 8.8     |
| B.....                                | do.           | do.            |        |       |       |       |       |       |       |       |       | 8.2   | 12.7  | 11.3  | 1.8   | 25.8    | 8.6     |
| E.....                                | do.           | Disked         |        |       |       |       |       |       |       |       |       | 5.7   | 12.7  | 9.5   | 1.4   | 23.6    | 7.9     |
| F.....                                | do.           | Stubble in     |        |       |       |       |       |       |       |       |       | 7.3   | 13.4  | 7.1   | 1.6   | 22.1    | 7.4     |
| Average.....                          |               |                |        |       |       |       |       |       |       |       |       |       | 13.2  | 9.8   | 1.4   | 24.5    | 8.2     |
| C or D.....                           | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       | 20.0  | 33.4  | 22.3  | 16.3  | 72.0    | 24.0    |
| 245.....                              | Corn          | Disked         |        |       |       |       |       |       |       |       |       | 16.1  | 22.5  | 17.5  | 7.3   | 47.3    | 15.8    |
| 246.....                              | do.           | do.            |        |       |       |       |       |       |       |       |       | 7.5   | 24.6  | 25.0  | 6.1   | 55.7    | 18.6    |
| Average.....                          |               |                |        |       |       |       |       |       |       |       |       |       | 23.6  | 21.3  | 6.7   | 51.5    | 17.2    |
| <b>BROMEGRASS</b>                     |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 41.....                               | Wheat         | Disked         |        | 1,850 | 1,700 | 450   | 1,900 | 250   | 0     | 750   | 1,050 | 1,030 | 1,460 | 850   | 550   | 11,840  | 987     |
|                                       | Brome-grass   | do.            |        | 5,500 | 1,600 | 850   | 1,450 | 1,250 | 0     | 0     | 650   | 980   | 1,290 | 1,070 | 680   | 15,320  | 1,277   |
|                                       | do.           | do.            |        | 6,100 | 1,400 | 450   | 1,700 | 1,750 | 630   | 0     | 600   | 640   | 1,070 | 760   | 850   | 15,950  | 1,329   |
| Average.....                          |               |                |        | 4,483 | 1,567 | 583   | 1,683 | 1,083 | 210   | 250   | 767   | 883   | 1,275 | 803   | 693   | 1,457   | 1,198   |
| <b>ALFALFA</b>                        |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 42.....                               | Wheat         | Fall plowed    | 900    | 1,750 | 2,200 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 3,950   | 329     |
|                                       | Alfalfa       | do.            | 800    | 4,300 | 6,000 | 1,000 | 2,170 | 1,400 | 0     | 0     | 0     | 2,880 | 0     | 0     | 690   | 18,440  | 1,537   |
|                                       | do.           | do.            | 800    | 4,150 | 6,400 | 1,950 | 2,530 | 1,600 | 0     | 0     | 0     | 2,070 | 2,240 | 3,670 | 0     | 24,610  | 2,051   |
| Average.....                          |               |                |        | 3,400 | 4,867 | 983   | 1,567 | 1,000 | 0     | 0     | 0     | 1,650 | 747   | 1,223 | 230   | 15,670  | 1,306   |
| <b>POTATOES</b>                       |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 75.....                               | Wheat         | Spring plowed  | 113.3  | 85.8  | 125.0 | 100.0 | 158.3 | 131.2 | 82.5  | 49.2  | 160.6 | 187.0 | 131.7 | 92.2  | 60.7  | 1,363.6 | 113.6   |
| 76.....                               | Oats          | do.            | 141.7  | 88.3  | 123.3 | 66.8  | 160.0 | 91.2  | 75.8  | 51.7  | 179.0 | 148.0 | 145.8 | 97.5  | 65.5  | 1,292.9 | 107.7   |
| Average.....                          |               |                |        | 87.1  | 124.2 | 83.4  | 159.2 | 111.2 | 79.2  | 50.5  | 169.5 | 167.5 | 138.8 | 94.9  | 63.1  | 1,328.3 | 110.7   |
| <b>SORGO</b>                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 58.....                               | Wheat         | Fall plowed    | 10,250 | 2,650 | 6,000 | 2,350 | 500   | 3,450 | 2,760 | 4,850 | 3,550 | 5,740 | 4,500 | 3,590 | 1,890 | 41,830  | 3,486   |



TABLE 57.—Annual acre yields of specified crops grown in rotations on individual plots at Edgeley, N. Dak., in one or more years from 1906 to 1922

| Crop, field, and rotation No. or plot | Previous crop | Tillage method     | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | Total | Average |
|---------------------------------------|---------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| SPRING WHEAT                          |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Main field:                           |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                                | Wheat.....    | Spring plowed..... | 35.8 | 4.1  | 13.3 | 28.3 | 4.0  | 0.7  | 35.0 | 16.3 | 11.3 | 34.8 | 5.5  | 8.3  | 2.2  | 0.5  | 8.8  | 7.5  |      | 180.6 | 12.0    |
| B.....                                | do.....       | do.....            | 29.5 | 7.0  | 15.3 | 23.3 | 5.2  | .5   | 27.0 | 12.2 | 9.2  | 26.2 | 3.8  | 7.5  | 3.5  | 1.8  | 9.2  | 9.3  |      | 161.0 | 10.7    |
| Average                               |               |                    |      | 5.6  | 14.3 | 25.8 | 4.6  | .6   | 31.0 | 14.3 | 10.3 | 30.5 | 4.7  | 7.9  | 2.9  | 1.2  | 9.0  | 8.4  |      | 170.8 | 11.4    |
| O or D.....                           | Fallow.....   | Fallowed.....      | 30.8 | 9.9  | 16.0 | 27.0 | 5.7  | .7   | 30.3 | 16.8 | 13.0 | 40.3 | 6.8  | 4.5  | 10.3 | .3   | 3.8  | 16.8 |      | 202.2 | 13.5    |
| H or I.....                           | do.....       | do.....            |      |      |      |      |      |      |      |      |      | 34.3 | 5.8  | 11.0 | 14.5 | 1.7  | 5.3  | 14.8 |      | 87.4  | 12.5    |
| J or K.....                           | do.....       | do.....            |      |      |      |      |      |      |      |      |      | 34.3 | 10.7 | 9.8  | 14.5 | .5   | 5.8  | 12.0 |      | 87.6  | 12.5    |
| L or M.....                           | do.....       | do.....            |      |      |      |      |      |      |      |      |      | 37.3 | 10.3 | 11.3 | 13.5 | .5   | 6.0  | 14.5 |      | 93.4  | 13.3    |
| N or O.....                           | do.....       | do.....            |      |      |      |      |      |      |      |      |      | 34.9 | 10.3 | 9.5  | 16.0 | 1.7  | 7.7  | 17.3 |      | 97.4  | 13.9    |
| Average                               |               |                    |      | 9.9  | 16.0 | 27.0 | 5.7  | .7   | 30.3 | 16.8 | 13.0 | 36.2 | 8.8  | 9.2  | 13.8 | .9   | 5.7  | 15.1 |      | 113.6 | 13.1    |
| 1a.....                               | Corn.....     | Disked.....        | 33.8 | 16.7 | 24.0 | 33.0 | 11.5 | 4.5  | 35.8 | 31.2 | 20.8 | 33.2 | 11.3 | 17.5 | 18.3 | 2.7  | 13.0 | 14.0 |      | 287.5 | 19.2    |
| 1b.....                               | do.....       | do.....            |      |      | 14.0 | 24.6 | 4.5  | .7   | 29.5 | 22.8 | 14.0 | 27.2 | 10.3 | 14.8 | 17.3 | 3.5  | 10.7 | 12.8 |      | 220.7 | 14.7    |
| 2a.....                               | do.....       | Spring plowed..... | 29.0 | 13.2 | 15.8 | 32.6 | 5.3  | .8   | 40.7 | 23.0 | 17.8 | 37.5 | 7.3  | 14.5 | 18.5 | 2.7  | 11.5 | 14.3 |      | 255.5 | 17.0    |
| 2b.....                               | do.....       | do.....            |      |      | 15.7 | 23.3 | 4.0  | .7   | 30.2 | 23.3 | 15.5 | 32.3 | 10.2 | 10.7 | 13.8 | 2.3  | 6.7  | 12.7 | 19.0 | 220.4 | 14.7    |
| 3.....                                | do.....       | Fall plowed.....   | 35.2 | 12.6 | 20.8 | 32.5 | 6.3  | 1.5  | 36.7 | 23.0 | 16.8 | 31.2 | 10.8 | 15.0 | 17.5 | 3.2  | 11.3 | 15.7 |      | 254.9 | 17.0    |
| 4.....                                | Oats.....     | do.....            | 35.5 | 10.5 | 15.7 | 28.5 | 3.1  | 1.2  | 32.3 | 14.7 | 19.2 | 25.7 | 8.3  | 11.7 | 11.3 | 3.0  | 12.3 | 12.7 |      | 210.2 | 14.0    |
| 5.....                                | Fallow.....   | Fallowed.....      | 30.3 | 11.8 | 19.5 | 29.8 | 7.8  | 2.7  | 39.0 | 25.3 | 15.8 | 38.7 | 9.2  | 10.0 | 20.5 | 1.7  | 8.5  | 12.7 |      | 253.0 | 16.9    |
| 8.....                                | Oats.....     | Fall plowed.....   | 27.5 | 8.5  | 10.3 | 26.6 | 6.3  | .7   | 28.2 | 17.2 | 15.0 | 37.0 | 10.5 | 13.3 | 7.0  | 2.8  | 13.2 | 16.8 |      | 213.4 | 14.2    |
| 9.....                                | do.....       | Spring plowed..... | 29.0 | 4.2  | 13.5 | 25.8 | 3.8  | .2   | 31.3 | 20.7 | 17.5 | 40.8 | 7.3  | 14.2 | 9.2  | 2.3  | 8.2  | 18.0 |      | 217.0 | 14.5    |
| 10.....                               | Corn.....     | Disked.....        | 30.8 | 11.2 | 22.5 | 32.0 | 3.3  | 1.7  | 34.7 | 23.7 | 15.5 | 40.0 | 11.3 | 15.7 | 17.7 | 1.7  | 13.3 | 15.8 |      | 260.1 | 17.3    |
| 11.....                               | do.....       | do.....            |      | 6.7  | 11.3 | 21.8 | 4.0  | .8   | 30.7 | 17.2 | 17.7 | 40.5 | 9.2  | 15.2 | 13.5 | 3.4  | 12.7 | 16.7 | 22.0 | 243.4 | 15.2    |
| 12.....                               | do.....       | do.....            | 28.3 | 14.8 | 22.2 | 29.0 | 6.6  | 3.0  | 34.3 | 27.0 | 17.5 | 34.7 | 10.7 | 16.5 | 18.0 | 3.4  | 13.7 | 8.2  |      | 259.6 | 17.3    |
|                                       |               |                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |

<sup>1</sup> Barley on all small-grain plots in section 9 in 1916; treatment uniform.



## CROP YIELDS AT THE EDGELEY (N. DAK.) FIELD STATION—Continued

TABLE 57.—Annual acre yields of specified crops grown in rotations on individual plots at Edgeley, N. Dak., in one or more years from 1906 to 1922—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method | 1906   | 1907  | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | Total  | Average |
|---------------------------------------|---------------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| OATS—con.                             |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Main field—Continued C or D.          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                                       | Fallow        | Fallowed       | 65.3   | 36.7  | ----- | 55.6  | 15.3  | 8.9   | 80.9  | 49.4  | 50.6  | 103.2 | 35.0  | 15.6  | 22.5  | 10.0  | 33.4  | 32.8  | ----- | 549.9  | 39.3    |
| 1a                                    | Wheat         | Fall plowed    | 64.1   | 25.9  | 26.3  | 64.0  | 9.3   | 4.4   | 65.0  | 29.4  | 52.5  | 49.7  | 5.3   | 24.1  | 25.3  | 23.8  | 42.2  | 33.4  | ----- | 480.6  | 32.0    |
| 1b                                    | do            | do             |        |       | 15.3  | 42.8  | 3.4   | .3    | 53.4  | 34.1  | 45.3  | 53.5  | 24.1  | 16.6  | 13.8  | 17.2  | 47.5  | 20.6  | 10.0  | 397.9  | 26.5    |
| 2a                                    | do            | Spring plowed  | 64.1   | 29.7  | 20.6  | 63.7  | 12.8  | 1.1   | 61.3  | 43.4  | 43.5  | 54.1  | 5.9   | 16.3  | 12.5  | 21.2  | 48.4  | 23.1  | ----- | 457.6  | 30.5    |
| 2b                                    | do            | do             |        |       | 15.6  | 44.6  | 6.5   | 3.6   | 51.0  | 49.4  | 44.4  | 71.6  | 24.1  | 26.6  | 14.1  | 17.8  | 56.3  | 25.9  | 17.5  | 469.0  | 31.3    |
| 3                                     | do            | Fall plowed    | 57.5   | 30.5  | 16.9  | 66.5  | 16.3  | 1.9   | 60.0  | 37.8  | 51.6  | 56.9  | 4.1   | 11.6  | 13.1  | 25.3  | 47.5  | 28.1  | ----- | 468.1  | 31.2    |
| 4                                     | Corn          | Disked         | 57.2   | 28.8  | 23.4  | 63.7  | 10.9  | 2.2   | 66.9  | 38.4  | 48.2  | 60.0  | 11.6  | 12.8  | 26.3  | 20.6  | 49.7  | 32.5  | ----- | 496.0  | 33.1    |
| 5                                     | Wheat         | Fall plowed    | 57.5   | 27.5  | 33.4  | 63.7  | 13.7  | 4.4   | 65.9  | 36.3  | 55.6  | 82.2  | 19.1  | 16.9  | 15.6  | 22.8  | 40.0  | 36.9  | ----- | 534.0  | 35.6    |
| 6                                     | Barley        | do             | 53.8   | 32.5  | 15.9  | 60.3  | 14.3  | 1.6   | 57.8  | 27.5  | 48.5  | 61.6  | 14.7  | 10.3  | 12.5  | 20.9  | 46.3  | 27.8  | ----- | 452.5  | 30.9    |
| 7                                     | Corn          | Spring plowed  | 65.0   | 24.8  | 24.7  | 60.9  | 10.3  | 5.8   | 72.5  | 43.4  | 42.2  | 81.0  | 19.4  | 14.1  | 19.4  | 13.8  | 56.6  | 32.5  | ----- | 521.4  | 34.8    |
| 8                                     | Fallow        | Fallowed       | 63.8   | 30.9  | 20.9  | 56.2  | 10.0  | 6.1   | 72.5  | 46.3  | 50.0  | 100.7 | 26.9  | 8.1   | 27.8  | 11.6  | 45.6  | 28.1  | ----- | 541.7  | 36.1    |
| 9                                     | Corn          | Spring plowed  | 60.0   | 5.6   | 16.9  | 58.7  | 5.3   | 8.4   | 74.7  | 37.8  | 24.4  | 85.0  | 20.6  | 11.6  | 21.9  | 9.7   | 59.1  | 24.4  | ----- | 464.1  | 30.0    |
| 10                                    | Bromegrass    | Fall plowed    | 70.3   | 32.8  | 16.3  | 55.0  | 8.1   | .6    | 54.4  | 37.2  | 41.3  | 65.3  | 12.8  | 14.7  | 9.1   | 18.1  | 35.6  | 20.3  | ----- | 422.6  | 28.2    |
| 11                                    | Clover        | do             |        | 18.3  | 9.7   | 50.3  | 3.1   | 5.0   | 49.1  | 51.6  | 47.8  | 86.9  | 26.9  | 11.3  | 3.1   | 7.2   | 42.2  | 30.0  | 34.4  | 476.9  | 29.8    |
| 12                                    | Flax          | do             | 65.3   |       | 22.5  | 53.1  | 15.6  | .6    | 55.0  | 27.5  | 50.3  | 77.8  | 25.0  | 16.9  | 20.9  | 13.4  | 47.8  | 35.9  | ----- | 462.3  | 33.0    |
| 14                                    | Winter rye    | Green manured  | 58.8   | 37.5  | 24.7  | 61.8  | 9.3   | 10.9  | 75.0  | 40.0  | 48.3  | 91.9  | 16.3  | 22.5  | 23.8  | 18.8  | 39.4  | 35.6  | ----- | 555.8  | 37.1    |
| 15                                    | Corn          | Disked         | 65.3   | 29.4  | 15.9  | 52.8  | 10.3  | 3.4   | 58.4  | 30.9  | 48.5  | 81.9  | 25.0  | 9.4   | 21.5  | 26.2  | 40.6  | 26.6  | ----- | 480.8  | 32.1    |
| 16                                    | Peas          | Green manured  | 60.0   | 32.5  | 19.4  | 53.8  | 6.5   | 1.7   | 64.4  | 53.8  | 46.9  | 95.9  | 25.3  | 13.8  | 13.8  | 17.5  | 52.8  | 27.2  | ----- | 525.3  | 35.0    |
| 17                                    | Corn          | Disked         | 61.9   | 26.3  | 23.4  | 54.3  | 9.3   | 2.0   | 66.3  | 42.1  | 47.8  | 80.3  | 26.9  | 9.1   | 18.4  | 19.1  | 50.3  | 22.2  | ----- | 497.8  | 33.2    |
| 18                                    | do            | do             |        | 15.0  | 14.4  | 55.3  | 6.8   | 1.3   | 62.8  | 39.4  | 46.3  | 78.4  | 27.5  | 14.4  | 22.2  | 16.3  | 46.6  | 35.0  | 36.6  | 518.3  | 32.4    |
| 19                                    | Fallow        | Fallowed       |        | 15.5  | 18.8  | 59.3  | 12.5  | 6.7   | 74.4  | 41.9  | 45.3  | 106.9 | 30.9  | 14.1  | 55.0  | 12.8  | 50.9  | 36.9  | 42.2  | 604.1  | 37.8    |
| 31                                    | Sweetclover   | Green manured  |        | 16.6  | 19.4  | 45.3  | 7.1   | .3    | 61.2  | 35.9  | 50.9  | 83.5  | 23.5  | 20.0  | 32.2  | 14.1  | 39.7  | 36.6  | 50.3  | 536.6  | 33.5    |
| 32                                    | Corn          | Disked         |        | 16.9  | 23.4  | 53.1  | 4.6   | .9    | 49.1  | 27.8  | 36.6  | 86.9  | 13.4  | 9.7   | 28.4  | 19.1  | 42.5  | 30.0  | 47.8  | 490.2  | 30.6    |
| 42                                    | Alfalfa       | Fall plowed    |        | 16.3  | 11.3  | 48.7  | 3.8   | .2    | 45.3  | 8.8   | 42.2  | 86.3  | 37.8  | 6.6   | 3.1   | 2.5   | 4.6   | 24.1  | 32.8  | 411.4  | 25.7    |
| 71a                                   | Fallow        | Fallowed       |        |       | 1.8   | 62.1  | 8.4   | 18.8  | 63.4  | 53.4  | 39.7  | 88.2  | 27.5  | 25.3  | 47.2  | 9.4   | 48.4  | 30.3  | 45.0  | 568.9  | 37.9    |
| 71b                                   | do            | do             |        |       | 7.8   | 61.8  | 9.0   | 5.9   | 63.4  | 79.7  | 55.0  | 100.0 | 27.8  | 31.9  | 26.9  | 21.2  | 55.3  | 31.9  | 37.2  | 614.8  | 41.0    |
| 72a                                   | Corn          | Disked         |        |       | 2.3   | 44.3  | 4.1   | 1.4   | 43.4  | 44.4  | 52.2  | 94.4  | 38.8  | 21.9  | 23.4  | 18.4  | 64.1  | 27.8  | 31.9  | 512.8  | 34.2    |
| 72b                                   | do            | do             |        |       | 10.9  | 64.0  | 9.6   | 14.7  | 76.3  | 82.2  | 57.8  | 100.7 | 40.3  | 44.4  | 29.1  | 24.1  | 58.1  | 46.3  | 33.4  | 691.9  | 46.1    |
| Average                               |               |                |        | 24.7  | 17.5  | 56.3  | 8.9   | 4.2   | 61.6  | 41.5  | 46.8  | 80.1  | 22.3  | 16.9  | 20.8  | 17.1  | 48.0  | 30.0  | 34.9  | 505.7  | 33.3    |
| Section 9:                            |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1                                     | Wheat         | Fall plowed    |        |       |       |       |       |       |       |       |       |       | 4.4   | 33.1  | 6.9   | 19.4  | 50.0  | 35.0  | 47.2  | 191.6  | 31.9    |
| 2                                     | do            | Spring plowed  |        |       |       |       |       |       |       |       |       |       | 5.2   | 32.2  | 20.0  | 22.8  | 48.8  | 36.6  | 50.6  | 211.0  | 35.2    |
| 3                                     | do            | Fall plowed    |        |       |       |       |       |       |       |       |       |       | 5.2   | 30.6  | 5.9   | 28.4  | 37.5  | 25.9  | 50.0  | 178.3  | 29.7    |
| 4                                     | Corn          | Disked         |        |       |       |       |       |       |       |       |       |       | 3.5   | 16.9  | 26.6  | 25.3  | 61.6  | 35.6  | 49.7  | 215.7  | 36.0    |
| 5                                     | Wheat         | Fall plowed    |        |       |       |       |       |       |       |       |       |       | 4.4   | 31.3  | 5.0   | 25.9  | 37.5  | 27.5  | 47.2  | 174.4  | 29.1    |
| 6                                     | Barley        | do             |        |       |       |       |       |       |       |       |       |       | 5.6   | 33.1  | 21.6  | 23.8  | 35.0  | 39.4  | 47.8  | 200.7  | 33.5    |
| 7                                     | Corn          | Spring plowed  |        |       |       |       |       |       |       |       |       |       | 3.8   | 33.4  | 26.9  | 20.9  | 36.6  | 40.3  | 51.6  | 209.7  | 35.0    |
| 8                                     | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       | 3.8   | 38.8  | 40.6  | 30.3  | 68.4  | 43.4  | 57.8  | 279.3  | 46.6    |
| 9                                     | Corn          | Spring plowed  |        |       |       |       |       |       |       |       |       |       | 6.9   | 35.9  | 35.0  | 24.4  | 62.8  | 45.0  | 45.6  | 248.7  | 41.5    |
| 13                                    | Wheat         | do             |        |       |       |       |       |       |       |       |       |       |       | 28.8  | 15.9  | 24.7  | 33.4  | 35.0  | 44.4  | 182.2  | 30.4    |
| 18                                    | Corn          | Disked         |        |       |       |       |       |       |       |       |       |       | 8.1   | 39.4  | 34.4  | 29.7  | 73.1  | 20.0  | 40.9  | 237.5  | 39.6    |
| 19                                    | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       | 7.5   | 49.7  | 37.5  | 24.4  | 62.2  | 32.2  | 50.0  | 256.0  | 42.7    |
| 31a                                   | Sweetclover   | Green manured  |        |       |       |       |       |       |       |       |       |       | 6.3   | 42.2  | 31.3  | 21.6  | 59.4  | 23.1  | 80.3  | 257.9  | 43.0    |
| 31b                                   | do            | do             |        |       |       |       |       |       |       |       |       |       | 6.7   | 32.5  | 29.7  | 18.8  | 62.5  | 25.0  | 85.3  | 253.8  | 42.3    |
| 32a                                   | Corn          | Disked         |        |       |       |       |       |       |       |       |       |       | 4.6   | 27.5  | 31.6  | 32.5  | 65.9  | 46.9  | 83.4  | 287.8  | 48.0    |
| 32b                                   | do            | do             |        |       |       |       |       |       |       |       |       |       | 6.3   | 27.5  | 26.6  | 27.2  | 65.9  | 43.8  | 73.4  | 264.4  | 44.1    |
| 71                                    | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       | 5.4   | 43.1  | 51.3  | 27.8  | 59.4  | 23.4  | 68.8  | 274.8  | 45.6    |
| 72                                    | Corn          | Disked         |        |       |       |       |       |       |       |       |       |       | 5.8   | 28.1  | 34.7  | 28.4  | 79.1  | 42.2  | 74.7  | 287.2  | 47.9    |
| Average                               |               |                |        |       |       |       |       |       |       |       |       |       |       | 33.6  | 26.8  | 25.4  | 55.5  | 34.5  | 58.3  | 233.9  | 39.0    |
| CORN TOTAL                            |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Main field:                           |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                                     | Corn          | Spring plowed  | 24,960 | 1,550 | 2,250 | 5,270 | 1,650 | 4,400 | 7,300 | 3,970 | 2,740 | 4,900 | 4,600 | 1,650 | 2,350 | 4,800 | 1,830 | 4,400 |       | 53,720 | 3,581   |
| B                                     | do            | Fall plowed    | 5,300  | 2,850 | 2,300 | 4,980 | 2,100 | 4,750 | 6,250 | 3,460 | 1,860 | 5,050 | 4,110 | 1,050 | 1,200 | 4,750 | 2,250 | 3,150 |       | 50,110 | 3,341   |
| Average                               |               |                |        | 2,200 | 2,275 | 5,125 | 1,875 | 4,575 | 6,775 | 3,715 | 2,300 | 4,975 | 4,385 | 1,350 | 1,775 | 4,775 | 2,040 | 3,775 |       | 51,915 | 3,461   |
| C or D:                               |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Fallow                                | Fallow        | Fallowed       | 4,950  | 1,150 | 1,500 | 4,610 | 1,850 | 5,500 | 6,500 | 2,840 | 3,280 | 5,350 | 4,440 | 1,200 | 2,750 | 7,200 | 1,600 | 3,700 |       | 50,470 | 3,365   |
| 1a                                    | Oats          | Fall plowed    | 5,150  | 4,150 | 2,600 | 5,310 | 1,550 | 5,200 | 6,700 | 3,950 | 4,170 | 6,900 | 4,460 | 2,300 | 4,200 | 5,200 | 2,320 | 4,400 |       | 63,410 | 4,227   |
| 1b                                    | do            | do             |        |       | 1,100 | 4,430 | 900   | 4,600 | 5,900 | 4,470 | 3,850 | 5,200 | 3,520 | 1,500 | 2,800 | 4,100 | 2,320 | 3,400 | 2,430 | 50,520 | 3,368   |
| 2a                                    | do            | Spring plowed  | 4,900  | 3,150 | 2,500 | 5,540 | 1,850 | 5,650 | 6,550 | 5,530 | 4,480 | 6,100 | 5,250 | 2,300 | 3,700 | 5,650 | 3,200 | 4,850 |       | 66,300 | 4,420   |
| 2b                                    | do            | do             |        |       | 1,250 | 5,270 | 1,300 | 4,900 | 7,200 | 3,790 | 3,520 | 6,800 | 3,740 | 1,400 | 2,600 | 4,350 | 2,000 | 4,250 | 3,000 | 55,370 | 3,691   |
| 3                                     | do            | Fall plowed    | 5,150  | 3,150 | 1,900 | 4,780 | 1,500 | 5,250 | 5,300 | 3,650 | 4,410 | 5,950 | 4,410 | 2,300 | 2,700 | 5,150 | 2,750 | 3,750 |       | 56,950 | 3,797   |
| 4                                     | Wheat         | do             | 4,970  | 2,850 | 1,750 | 5,200 | 850   | 4,250 | 6,300 | 3,750 | 4,380 | 5,200 | 4,200 | 1,950 | 3,300 | 5,150 | 2,630 | 3,300 |       | 55,150 | 3,677   |
| 6                                     | Oats          | do             | 5,140  | 2,650 | 2,350 | 4,490 | 1,450 | 4,350 | 6,000 | 3,470 | 3,980 | 5,400 | 4,260 | 1,700 | 2,900 | 5,250 | 2,600 | 4,800 |       | 55,650 | 3,710   |
| 7                                     | Barley        | Spring plowed  | 4,300  | 1,950 | 2,550 | 4,890 | 1,950 | 4,600 | 6,500 | 4,880 | 1,570 | 7,500 | 5,340 | 1,850 | 2,750 | 5,450 | 2,630 | 3,600 |       | 61,010 | 4,067   |
| 9                                     | Wheat         | do             | 4,910  | 2,300 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE EDGELEY (N. DAK.) FIELD STATION—Continued

TABLE 57.—Annual acre yields of specified crops grown in rotations on individual plots at Edgeley, N. Dak., in one or more years from 1906 to 1922—Continued

| Crop, field, and rotation No. or plot | Previous crop | Tillage method     | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | Total  | Average |
|---------------------------------------|---------------|--------------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN                                  |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| TOTAL—CON.                            |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| Section 9:                            |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 6,810 | 2,520 | 5,100 | 5,600 | 3,800 | 4,900 | 3,970 | 25,890 | 4,315   |
| B.....                                | do.....       | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 5,670 | 2,000 | 4,600 | 4,900 | 2,600 | 3,600 | 2,550 | 20,250 | 3,375   |
| E.....                                | do.....       | Subsoiled.....     |      |      |      |      |      |      |      |      |      |      | 6,120 | 3,450 | 4,900 | 5,500 | 2,800 | 5,800 | 3,100 | 25,550 | 4,258   |
| F.....                                | do.....       | Spring listed..... |      |      |      |      |      |      |      |      |      |      | 5,400 | 3,540 |       | 4,300 | 3,250 | 5,800 | 3,570 | 20,460 | 4,092   |
| G.....                                | do.....       | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 6,070 | 3,480 | 5,700 | 5,500 | 2,980 | 6,000 | 4,390 | 28,050 | 4,675   |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      |      |      |      |      |      |      |      |      |      |       | 2,998 | 5,075 | 5,160 | 3,086 | 5,220 | 3,516 | 24,040 | 4,143   |
| C or D.....                           |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       | Fallow.....   | Fallow.....        |      |      |      |      |      |      |      |      |      |      | 5,990 | 3,370 | 4,500 | 5,700 | 3,000 | 6,500 | 6,750 | 29,820 | 4,970   |
| 1.....                                | Oats.....     | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 5,410 | 3,400 | 3,300 | 6,400 | 3,460 | 3,600 | 3,410 | 23,570 | 3,928   |
| 2.....                                | do.....       | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 5,820 | 4,000 | 4,800 | 5,500 | 3,440 | 5,000 | 3,990 | 26,730 | 4,455   |
| 3.....                                | do.....       | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 5,810 |       | 3,300 | 5,400 | 3,300 | 4,200 | 3,810 | 20,010 | 4,002   |
| 4.....                                | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 5,420 | 2,600 | 3,900 | 5,000 | 2,300 | 4,500 | 3,310 | 21,610 | 3,602   |
| 6.....                                | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 6,190 | 3,200 | 3,900 | 5,900 | 3,200 | 4,900 | 3,870 | 24,970 | 4,162   |
| 7.....                                | Barley.....   | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 5,190 | 3,000 | 3,700 | 4,900 | 2,820 | 5,100 | 3,580 | 23,100 | 3,850   |
| 9.....                                | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 5,160 | 3,300 | 5,000 | 6,000 | 3,100 | 4,400 | 3,550 | 25,350 | 4,225   |
| 13.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      |       | 2,900 | 4,200 | 4,500 | 3,000 | 4,400 | 3,170 | 22,170 | 3,695   |
| 18.....                               | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 7,280 | 4,260 | 4,600 | 4,700 | 3,340 | 6,100 | 3,290 | 26,290 | 4,382   |
| 19.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 4,820 | 3,850 | 5,400 | 5,000 | 2,640 | 5,500 | 3,460 | 25,850 | 4,308   |
| 31a.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 5,540 | 3,100 | 4,500 | 5,000 | 2,460 | 5,700 | 3,900 | 24,660 | 4,110   |
| 31b.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 4,700 | 2,850 | 3,600 | 5,000 | 2,460 | 5,500 | 2,530 | 21,940 | 3,657   |
| 32a.....                              | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 6,100 | 2,720 | 4,300 | 4,400 | 2,560 | 5,600 | 3,770 | 23,350 | 3,892   |
| 32b.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 5,610 | 2,770 | 4,200 | 4,200 | 1,900 | 5,500 | 3,350 | 21,920 | 3,653   |
| 71.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 6,980 | 4,280 | 5,200 | 5,600 | 3,840 | 6,400 | 4,650 | 29,970 | 4,995   |
| 72.....                               | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 5,610 | 3,200 | 5,400 | 4,600 | 3,640 | 6,300 | 3,720 | 26,860 | 4,477   |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      |      |      |      |      |      |      |      |      |      |       | 3,295 | 4,331 | 5,131 | 2,966 | 5,169 | 3,585 | 24,272 | 4,087   |
| CORN GRAIN                            |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| Main field:                           |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed..... | 39.0 | 0    | 0    | 37.4 | 0    | 0    | 0    | 16.0 | 5.1  | 0    | 15.1  | 0     | 0     | 0     | 0     | 0     | 0     | 73.6   | 4.9     |
| B.....                                | do.....       | Fall plowed.....   | 42.4 | 0    | 0    | 33.3 | 0    | 0    | 0    | 19.4 | 3.6  | 0    | 18.0  | 0     | 0     | 0     | 0     | 0     | 0     | 74.3   | 5.0     |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      | 0    | 0    | 35.4 | 0    | 0    | 0    | 17.7 | 4.4  | 0    | 16.6  | 0     | 0     | 0     | 0     | 0     | 0     | 74.0   | 5.0     |
| C or D.....                           |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       | Fallow.....   | Fallow.....        | 39.6 | 0    | 0    | 36.6 | 0    | 0    | 0    | 19.1 | 3.9  | 0    | 16.3  | 0     | 0     | 0     | 0     | 0     | 0     | 70.9   | 4.7     |
| 1a.....                               | Oats.....     | Fall plowed.....   | 41.0 | 0    | 0    | 30.9 | 0    | 0    | 0    | 22.0 | 16.9 | 0    | 19.4  | 0     | 0     | 0     | 0     | 0     | 0     | 89.2   | 5.9     |
| 1b.....                               | do.....       | do.....            |      | 0    | 0    | 27.6 | 0    | 0    | 0    | 22.4 | 14.6 | 0    | 13.1  | 0     | 0     | 0     | 0     | 0     | 3.3   | 81.0   | 5.4     |
| 2a.....                               | do.....       | Spring plowed..... | 38.9 | 0    | 0    | 31.3 | 0    | 0    | 0    | 25.3 | 20.7 | 0    | 22.9  | 0     | 0     | 0     | 0     | 0     | 0     | 100.2  | 6.7     |
| 2b.....                               | do.....       | do.....            |      | 0    | 0    | 28.9 | 0    | 0    | 0    | 18.6 | 12.4 | 0    | 15.6  | 0     | 0     | 0     | 0     | 0     | 8.6   | 84.1   | 5.6     |
| 3.....                                | do.....       | Fall plowed.....   | 41.0 | 0    | 0    | 29.0 | 0    | 0    | 0    | 18.6 | 18.4 | 0    | 17.3  | 0     | 0     | 0     | 0     | 0     | 0     | 83.3   | 5.6     |
| 4.....                                | Wheat.....    | do.....            | 39.2 | 0    | 0    | 32.1 | 0    | 0    | 0    | 17.9 | 15.1 | 0    | 17.0  | 0     | 0     | 0     | 0     | 0     | 0     | 82.1   | 5.5     |
| 6.....                                | Oats.....     | do.....            | 40.1 | 0    | 0    | 29.9 | 0    | 0    | 0    | 17.1 | 17.4 | 0    | 17.3  | 0     | 0     | 0     | 0     | 0     | 0     | 81.7   | 5.4     |
| 7.....                                | Barley.....   | Spring plowed..... | 34.7 | 0    | 0    | 29.9 | 0    | 0    | 0    | 16.7 | 14.0 | 0    | 19.1  | 0     | 0     | 0     | 0     | 0     | 0     | 79.7   | 5.3     |
| 9.....                                | Wheat.....    | do.....            | 38.3 | 0    | 0    | 29.3 | 0    | 0    | 0    | 20.0 | 14.1 | 0    | 16.9  | 0     | 0     | 0     | 0     | 0     | 0     | 80.3   | 5.4     |
| 10.....                               | Oats.....     | do.....            | 41.0 | 0    | 0    | 28.4 | 0    | 0    | 0    | 27.6 | 18.6 | 0    | 18.6  | 0     | 0     | 0     | 0     | 0     | 0     | 93.2   | 6.2     |
| 11.....                               | do.....       | do.....            |      | 0    | 0    | 26.4 | 0    | 0    | 0    | 22.3 | 15.9 | 0    | 19.9  | 0     | 0     | 0     | 0     | 0     | 8.1   | 92.6   | 5.8     |
| 12.....                               | do.....       | do.....            | 41.0 | 0    | 0    | 31.6 | 0    | 0    | 0    | 25.9 | 22.1 | 0    | 19.1  | 0     | 0     | 0     | 0     | 0     | 0     | 98.7   | 6.6     |
| 14.....                               | do.....       | do.....            | 40.6 | 0    | 0    | 33.1 | 0    | 0    | 0    | 22.4 | 17.0 | 0    | 17.7  | 0     | 0     | 0     | 0     | 0     | 0     | 90.2   | 6.0     |
| 15.....                               | Wheat.....    | do.....            | 41.9 | 0    | 0    | 31.3 | 0    | 0    | 0    | 19.7 | 17.7 | 0    | 16.1  | 0     | 0     | 0     | 0     | 0     | 0     | 84.8   | 5.7     |
| 16.....                               | Oats.....     | do.....            | 37.5 | 0    | 0    | 28.6 | 0    | 0    | 0    | 12.7 | 7.6  | 0    | 15.9  | 0     | 0     | 0     | 0     | 0     | 0     | 64.8   | 4.3     |
| 17.....                               | Wheat.....    | do.....            | 38.9 | 0    | 0    | 28.1 | 0    | 0    | 0    | 17.7 | 8.4  | 0    | 12.3  | 0     | 0     | 0     | 0     | 0     | 0     | 66.5   | 4.4     |
| 18.....                               | do.....       | do.....            |      | 0    | 0    | 26.9 | 0    | 0    | 0    | 20.4 | 9.9  | 0    | 14.0  | 0     | 0     | 0     | 0     | 0     | 7.1   | 78.3   | 4.9     |
| 19.....                               | Oats.....     | do.....            |      | 0    | 0    | 30.4 | 0    | 0    | 0    | 23.7 | 11.6 | 0    | 14.3  | 0     | 0     | 0     | 0     | 0     | 8.3   | 88.3   | 5.5     |
| 31.....                               | do.....       | do.....            |      | 0    | 0    | 29.3 | 0    | 0    | 0    | 26.4 | 15.6 | 0    | 17.0  | 0     | 0     | 0     | 0     | 0     | 11.3  | 99.6   | 6.2     |
| 32.....                               | Wheat.....    | do.....            |      | 9    | 0    | 29.4 | 0    | 0    | 0    | 27.7 | 19.4 | 0    | 18.4  | 0     | 0     | 0     | 0     | 0     | 9.9   | 104.8  | 6.6     |
| 42.....                               | Oats.....     | do.....            |      | 0    | 0    | 27.9 | 0    | 0    | 0    | 16.9 | 16.3 | 0    | 20.9  | 0     | 0     | 0     | 0     | 0     | 5.3   | 87.3   | 5.5     |
| 71a.....                              | do.....       | do.....            |      | 0    | 0    | 27.6 | 0    | 0    | 0    | 23.1 | 16.4 | 0    | 20.7  | 0     | 0     | 0     | 0     | 0     | 12.0  | 99.8   | 6.7     |
| 71b.....                              | do.....       | do.....            |      | 0    | 0    | 34.4 | 0    | 0    | 0    | 23.9 | 21.4 | 0    | 18.9  | 0     | 0     | 0     | 0     | 0     | 16.9  | 115.5  | 7.7     |
| 72a.....                              | Wheat.....    | do.....            |      | 0    | 0    | 28.3 | 0    | 0    | 0    | 20.0 | 15.1 | 0    | 18.9  | 0     | 0     | 0     | 0     | 0     | 6.6   | 88.9   | 5.9     |
| 72b.....                              | do.....       | do.....            |      | 0    | 0    | 33.3 | 0    | 0    | 0    | 26.4 | 25.1 | 0    | 19.5  | 0     | 0     | 0     | 0     | 0     | 17.7  | 122.0  | 8.1     |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      | 0    | 0    | 29.8 | 0    | 0    | 0    | 21.4 | 16.1 | 0    | 17.6  | 0     | 0     | 0     | 0     | 0     | 9.6   | 89.5   | 5.9     |
| Section 9:                            |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
| A.....                                | Corn.....     | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 30.1  | 0     | 0     | 0     | 0     | 0     | 11.0  | 11.0   | 1.8     |
| B.....                                | do.....       | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 22.4  | 0     | 0     | 0     | 0     | 0     | 7.1   | 7.1    | 1.2     |
| E.....                                | do.....       | Subsoiled.....     |      |      |      |      |      |      |      |      |      |      | 28.1  | 0     | 0     | 0     | 0     | 0     | 14.3  | 14.3   | 2.4     |
| F.....                                | do.....       | Spring listed..... |      |      |      |      |      |      |      |      |      |      | 22.1  | 0     |       | 0     | 0     | 0     | 13.9  | 13.9   | 2.3     |
| G.....                                | do.....       | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 23.9  | 0     | 0     | 0     | 0     | 0     | 15.6  | 15.6   | 2.6     |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      |      |      |      |      |      |      |      |      |      |       | 0     | 0     | 0     | 0     | 0     | 12.4  | 12.4   | 2.1     |
| C or D.....                           |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       | Fallow.....   | Fallow.....        |      |      |      |      |      |      |      |      |      |      | 23.7  | 0     | 0     | 0     | 0     | 0     | 27.9  | 27.9   | 4.7     |
| 1.....                                | Oats.....     | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 15.1  | 0     | 0     | 0     | 0     | 0     | 4.4   | 4.4    | .7      |
| 2.....                                | do.....       | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 20.3  | 0     | 0     | 0     | 0     | 0     | 9.9   | 9.9    | 1.7     |
| 3.....                                | do.....       | Fall plowed.....   |      |      |      |      |      |      |      |      |      |      | 23.0  |       | 0     | 0     | 0     | 0     | 5.9   | 5.9    | 1.0     |
| 4.....                                | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 21.0  | 0     | 0     | 0     | 0     | 0     | 4.4   | 4.4    | .7      |
| 6.....                                | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 17.7  | 0     | 0     | 0     | 0     | 0     | 6.7   | 6.7    | 1.1     |
| 7.....                                | Barley.....   | Spring plowed..... |      |      |      |      |      |      |      |      |      |      | 17.7  | 0     | 0     | 0     | 0     | 0     | 9.7   | 9.7    | 1.6     |
| 9.....                                | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 18.7  | 0     | 0     | 0     | 0     | 0     | 6.4   | 6.4    | 1.1     |
| 13.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      |       | 0     | 0     | 0     | 0     | 0     | 6.7   | 6.7    | 1.1     |
| 18.....                               | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 24.0  | 0     | 0     | 0     | 0     | 0     | 5.6   | 5.6    | .9      |
| 19.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 17.4  | 0     | 0     | 0     | 0     | 0     | 8.0   | 8.0    | 1.3     |
| 31a.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 21.3  | 0     | 0     | 0     | 0     | 0     | 8.6   | 8.6    | 1.4     |
| 31b.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 18.6  | 0     | 0     | 0     | 0     | 0     | 1.9   | 1.9    | .3      |
| 32a.....                              | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 24.3  | 0     | 0     | 0     | 0     | 0     | 8.1   | 8.1    | 1.4     |
| 32b.....                              | do.....       | do.....            |      |      |      |      |      |      |      |      |      |      | 21.6  | 0     | 0     | 0     | 0     | 0     | 2.1   | 2.1    | .4      |
| 71.....                               | Oats.....     | do.....            |      |      |      |      |      |      |      |      |      |      | 22.6  | 0     | 0     | 0     | 0     | 0     | 17.9  | 17.9   | 3.0     |
| 72.....                               | Wheat.....    | do.....            |      |      |      |      |      |      |      |      |      |      | 21.6  | 0     | 0     | 0     | 0     | 0     | 17.4  | 17.4   | 2.9     |
| Average.....                          |               |                    |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |        |         |
|                                       |               |                    |      |      |      |      |      |      |      |      |      |      |       | 0     | 0     | 0     | 0     | 0     | 7.7   | 7.7    | 1.3     |

## CROP YIELDS AT THE EDGELEY (N. DAK.) FIELD STATION—Continued

TABLE 57.—Annual acre yields of specified crops grown in rotations on individual plots at Edgeley, N. Dak., in one or more years from 1906 to 1922—Continued

| Crop, field, and rotation No. or plot | Previous crop   | Tillage method     | 1906  | 1907  | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | Total  | Average |       |
|---------------------------------------|-----------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|-------|
| BARLEY                                |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| Main field:                           |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| A.....                                | Barley.....     | Spring plowed..... | 37.1  | 10.2  | 25.0  | 27.0  | 1.3   | 0     | 24.2  | 17.9  | 32.3  | 44.2  | 25.6  | 8.1   | 4.8   | 11.3  | 27.7  | 17.1  | ----- | 276.7  | 18.4    |       |
| B.....                                | do.....         | Fall plowed.....   | 32.9  | 9.4   | 24.2  | 24.7  | 1.7   | 0     | 26.5  | 20.2  | 26.9  | 27.9  | 17.7  | 5.6   | 5.4   | 10.6  | 17.1  | 16.5  | ----- | 234.4  | 15.6    |       |
| Average.....                          |                 |                    | ----- | 9.8   | 24.6  | 25.9  | 1.5   | 0     | 25.4  | 19.1  | 29.6  | 36.1  | 21.7  | 6.9   | 5.1   | 11.0  | 22.4  | 16.8  | ----- | 255.6  | 17.0    |       |
| C or D.....                           | Fallow.....     | Fallow.....        | 30.8  | 16.0  | 24.2  | 28.3  | 2.3   | 0     | 32.3  | 26.9  | 29.4  | 42.3  | 18.8  | 12.9  | 14.6  | 8.3   | 22.9  | 17.7  | ----- | 296.9  | 19.8    |       |
| 6.....                                | Corn.....       | Disked.....        | 26.7  | 18.3  | 31.9  | 33.1  | 2.9   | 0     | 30.2  | 37.1  | 33.1  | 42.1  | 24.6  | 11.9  | 23.3  | 18.8  | 35.4  | 19.6  | ----- | 362.3  | 24.2    |       |
| 7.....                                | Oats.....       | Spring plowed..... | 28.5  | 10.6  | 26.0  | 32.7  | 1.5   | 0     | 34.0  | 19.0  | 33.6  | 50.8  | 21.0  | 12.9  | 8.3   | 20.0  | 24.0  | 17.9  | ----- | 312.3  | 20.8    |       |
| Average.....                          |                 |                    | ----- | 14.5  | 29.0  | 32.9  | 2.2   | 0     | 32.1  | 28.1  | 33.4  | 46.5  | 22.8  | 12.4  | 15.8  | 19.4  | 29.7  | 18.8  | ----- | 337.3  | 22.5    |       |
| Section 9:                            |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| 6.....                                | Corn.....       | Disked.....        | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 4.4   | 17.9  | 26.9  | 12.3  | 29.8  | 31.7  | 22.9  | 141.5  | 23.6    |       |
| 7.....                                | Oats.....       | Spring plowed..... | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 6.0   | 24.4  | 14.4  | 13.1  | 29.2  | 18.1  | 28.8  | 128.0  | 21.3    |       |
| Average.....                          |                 |                    | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 21.2  | 20.7  | 12.7  | 29.5  | 24.9  | 25.9  | 134.8  | 22.5    |       |
| FLAX                                  |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| 12.....                               | Bromegrass..... | Spring plowed..... | 12.5  | 4.5   | 0     | 13.2  | 0     | 0     | 1.6   | 0     | 4.5   | 4.1   | 8.9   | 1.4   | 0     | 0     | 0     | 0     | ----- | 38.2   | 2.5     |       |
| BROME-GRASS                           |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| 10.....                               | Wheat.....      | Disked.....        | 0     | 2,200 | 1,650 | 4,750 | 1,300 | 650   | 2,600 | 2,400 | 2,650 | 2,360 | 3,800 | 1,600 | 1,600 | 2,750 | 2,100 | 2,500 | ----- | 34,910 | 2,327   |       |
|                                       | Bromegrass..... | Disked.....        | 0     | 3,500 | 2,600 | 3,600 | 800   | 1,550 | 5,550 | 2,400 | 3,350 | 2,880 | 4,400 | 1,350 | 1,300 | 2,000 | 2,000 | 2,600 | ----- | 39,880 | 2,659   |       |
| 12.....                               | Wheat.....      | Disked.....        | 0     | 2,400 | 2,150 | 4,900 | 1,200 | 1,350 | 3,600 | 2,750 | 3,100 | 3,480 | 4,400 | 2,700 | 2,000 | 3,250 | 2,200 | 2,550 | ----- | 42,030 | 2,802   |       |
|                                       | Bromegrass..... | Disked.....        | 0     | 3,900 | 2,850 | 3,900 | 1,200 | 1,400 | 4,050 | 2,800 | 5,050 | 2,480 | 6,400 | 1,200 | 2,200 | 2,650 | 2,000 | 2,700 | ----- | 44,780 | 2,985   |       |
| Average.....                          |                 |                    | ----- | 3,000 | 2,313 | 4,288 | 1,125 | 1,238 | 3,950 | 2,588 | 3,538 | 2,800 | 4,750 | 1,713 | 1,775 | 2,663 | 2,075 | 2,588 | ----- | 40,400 | 2,693   |       |
| ALFALFA                               |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| 42.....                               | Wheat.....      | Fall plowed.....   | ----- | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2,100 | 0     | 0     | 0     | 0     | 0     | ----- | 2,100  | 140     |       |
|                                       | Alfalfa.....    | Fall plowed.....   | ----- | 0     | 300   | 2,000 | 1,250 | 650   | 4,300 | 1,950 | 2,740 | 4,430 | 4,880 | 1,300 | 1,000 | 0     | 0     | 2,000 | 2,100 | -----  | 28,900  | 1,927 |
|                                       | do.....         | Fall plowed.....   | ----- | 0     | 550   | 0     | 750   | 1,300 | 3,250 | 1,350 | 3,870 | 5,090 | 6,420 | 1,850 | 0     | 0     | 0     | 2,100 | 2,200 | -----  | 28,730  | 1,915 |
| Average.....                          |                 |                    | ----- | ----- | 283   | 667   | 667   | 650   | 2,517 | 1,100 | 2,203 | 3,173 | 4,467 | 1,050 | 333   | 0     | 0     | 1,367 | 1,433 | -----  | 19,910  | 1,327 |
| CLOVER                                |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |       |
| 11.....                               | Wheat.....      | Fall plowed.....   | ----- | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | ----- | 0      | 0       |       |
|                                       | Clover.....     | Fall plowed.....   | ----- | 0     | 550   | 0     | 850   | 0     | 0     | 500   | 2,480 | 2,300 | 5,940 | 1,300 | 0     | 0     | 0     | 1,500 | 1,500 | -----  | 16,920  | 1,128 |
| Average.....                          |                 |                    | ----- | ----- | 275   | 0     | 425   | 0     | 0     | 250   | 1,240 | 1,150 | 2,970 | 650   | 0     | 0     | 0     | 750   | 750   | -----  | 8,460   | 564   |

\* Treatment of barley plots on section 9 uniform in 1916.

## CROP YIELDS AT THE SHERIDAN (WYO.) FIELD STATION

TABLE 58.—Annual acre yields of specified crops grown in rotations on individual plots at Sheridan, Wyo., in one or more years from 1917 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1917 to 1924, see Figure 16 (p. 26), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, sweetclover, and sorgo are given in pounds; all other yields are stated in bushels.]

| Crop and rotation No. or plot | Previous crop     | Tillage method         | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|-------------------|------------------------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>           |                   |                        |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Winter wheat..... | Late fall plowed.....  | 13.0 | 34.5 | 0    | 21.3 | 3.0  | 24.3 | 7.2  | 33.7 | 10.7 | 14.7 | 149.4 | 16.6    |
| B.....                        | do.....           | Early fall plowed..... | 13.3 | 33.8 | 0    | 20.5 | 2.3  | 21.2 | 7.3  | 39.2 | 5.5  | 20.2 | 150.0 | 16.7    |
| E.....                        | do.....           | Subsoiled.....         | 12.3 | 23.5 | 0    | 22.0 | 1.7  | 27.8 | 5.7  | 28.8 | 9.5  | 12.8 | 131.8 | 14.6    |
| F.....                        | do.....           | Fall listed.....       | 12.0 | 23.0 | 0    | 13.0 | 1.5  | 11.7 | 4.7  | 26.2 | 10.2 | 10.0 | 100.3 | 11.1    |
| Average.....                  |                   |                        |      | 28.7 | 0    | 19.2 | 2.1  | 21.3 | 6.2  | 32.0 | 9.0  | 14.4 | 132.9 | 14.8    |
| C or D.....                   | Fallow.....       | Fallow.....            | 13.7 | 44.2 | 9.9  | 30.0 | 14.0 | 20.8 | 22.3 | 45.8 | 40.3 | 37.3 | 264.6 | 29.4    |
| 37.....                       | Potatoes.....     | Disked.....            |      | 38.2 | .5   | 14.5 | 17.8 | 28.0 | 26.0 | 43.8 | 42.0 | 26.8 | 199.4 | 24.9    |
| 85a.....                      | Fallow.....       | Fallow.....            | 7.5  | 38.0 | 7.2  | 32.0 | 23.8 | 38.8 | 26.5 | 48.0 | 35.7 | 39.7 | 289.7 | 32.2    |
| 85b.....                      | do.....           | do.....                |      |      |      | 17.0 | 16.5 | 31.2 | 22.2 | 50.5 | 41.0 | 36.2 | 197.6 | 32.9    |
| 114.....                      | Corn.....         | Disked.....            | 6.5  | 37.8 | .3   | 29.7 | 11.5 | 23.3 | 16.0 | 50.8 | 40.7 | 24.0 | 234.1 | 26.0    |
| 115.....                      | Winter rye.....   | Green manured.....     | 9.3  | 35.7 | 1.0  | 33.7 | 13.5 | 30.3 | 31.7 | 56.2 | 40.0 | 35.2 | 277.3 | 30.8    |
| 116.....                      | do.....           | Disked.....            | 9.0  | 37.2 | .3   | 33.7 | 9.2  | 26.7 | 19.7 | 49.3 | 39.2 | 27.3 | 242.6 | 27.0    |
| 117.....                      | Peas.....         | Green manured.....     | 9.2  | 40.8 | 3.8  | 33.0 | 18.3 | 25.0 | 31.3 | 58.5 | 42.0 | 33.3 | 286.0 | 31.8    |
| 118.....                      | Fallow.....       | Fallow.....            | 9.2  | 47.7 | 11.3 | 34.0 | 24.8 | 33.0 | 35.8 | 60.5 | 45.5 | 47.0 | 339.6 | 37.7    |
| 119.....                      | Corn.....         | Disked.....            | 8.5  | 35.7 | .2   | 35.2 | 10.5 | 27.8 | 21.7 | 44.8 | 37.5 | 23.8 | 237.2 | 26.4    |
| 131.....                      | do.....           | do.....                | 9.3  | 33.3 | .5   | 29.2 | 9.7  | 23.3 | 20.8 | 41.7 | 28.7 | 23.0 | 210.2 | 23.4    |
| 132a.....                     | Sweetclover.....  | Green manured.....     | 9.8  | 41.3 | 5.7  | 33.8 | 26.7 | 31.7 | 28.0 | 58.2 | 40.3 | 33.7 | 299.4 | 33.3    |
| 132b.....                     | do.....           | do.....                |      |      |      | 18.7 | 19.3 | 27.5 | 20.0 | 33.7 | 28.3 | 27.0 | 155.8 | 26.0    |
| 135.....                      | Fallow.....       | Fallow.....            |      |      |      | 15.3 | 12.5 | 35.0 | 25.5 | 56.5 | 49.5 | 40.5 | 219.5 | 36.6    |
| 258.....                      | Oats.....         | Disked.....            | 9.0  | 36.3 | 0    | 34.3 | 2.5  | 26.7 | 14.3 | 46.3 | 37.8 | 16.5 | 214.7 | 23.9    |
| 571.....                      | Winter wheat..... | do.....                | 10.5 | 30.8 | 0    | 30.8 | 5.5  | 19.2 | 6.8  | 43.0 | 10.7 | 8.0  | 154.8 | 17.2    |
| 572.....                      | Winter wheat..... | Fall plowed.....       | 7.7  | 31.7 | 0    | 25.0 | 3.7  | 28.8 | 8.7  | 42.3 | 10.8 | 8.3  | 159.3 | 17.7    |
|                               | do.....           | Disked.....            | 4.8  | 30.3 | 0    | 21.0 | 4.0  | 25.3 | 9.3  | 46.3 | 17.2 | 11.8 | 165.2 | 18.4    |
|                               | do.....           | Fall plowed.....       | 8.3  | 33.5 | 0    | 25.7 | 1.7  | 30.3 | 12.0 | 41.3 | 10.0 | 8.0  | 162.5 | 18.1    |
| 573.....                      | do.....           | Disked.....            | 6.0  | 29.3 | 0    | 22.2 | 1.5  | 33.7 | 10.0 | 50.2 | 18.7 | 11.8 | 177.4 | 19.7    |
|                               | do.....           | do.....                | 5.3  | 29.0 | 0    | 28.3 | 2.3  | 26.8 | 9.2  | 42.0 | 18.2 | 10.5 | 166.3 | 18.5    |
| Average.....                  |                   |                        |      | 35.5 | 17.1 | 29.2 | 11.8 | 28.6 | 19.8 | 48.2 | 31.7 | 24.6 | 219.4 | 26.1    |

1 Spring wheat on new breaking, 1920.



## CROP YIELDS AT THE SHERIDAN (WYO.) FIELD STATION—Continued

TABLE 58.—Annual acre yields of specified crops grown in rotations on individual plots at Sheridan, Wyo., in one or more years from 1917 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|---------------|----------------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>SPRING WHEAT</b>           |               |                |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Spring wheat  | Spring plowed  | 6.5  | 21.1 | .6   | 16.2 | 1.0  | 22.7 | 13.7 | 20.8 | 17.2 | 7.3  | 120.6 | 13.4    |
| B.....                        | do.           | Fall plowed    | 5.3  | 23.1 | 0    | 20.5 | 0    | 24.5 | 15.2 | 21.8 | 18.2 | 5.8  | 129.1 | 14.3    |
| E.....                        | do.           | Subsoiled      | 4.3  | 19.7 | 0    | 20.7 | 0    | 23.8 | 14.3 | 18.0 | 19.2 | 5.3  | 121.0 | 13.4    |
| F.....                        | do.           | Fall listed    | 5.7  | 21.8 | 0    | 14.2 | 0    | 18.7 | 9.0  | 15.7 | 16.3 | 8.2  | 103.9 | 11.5    |
| Average.....                  |               |                |      | 21.4 | .2   | 17.9 | .3   | 22.4 | 13.1 | 19.1 | 17.7 | 6.7  | 118.7 | 13.2    |
| C or D.....                   | Fallow        | Fallowed       | 5.3  | 29.2 | 3.3  | 23.5 | 7.0  | 34.2 | 24.8 | 27.2 | 30.8 | 25.3 | 205.3 | 22.8    |
| H or I.....                   | do.           | do.            | 3.3  | 24.5 | 4.3  | 19.5 | 25.2 | 26.3 | 29.7 | 20.7 | 28.0 | 18.0 | 196.2 | 21.8    |
| J or K.....                   | do.           | do.            | 3.3  | 23.4 | 6.6  | 20.7 | 25.2 | 26.8 | 32.7 | 22.3 | 31.7 | 19.3 | 208.7 | 23.2    |
| L or M.....                   | do.           | do.            | 2.8  | 25.2 | 7.1  | 23.3 | 23.7 | 32.2 | 32.8 | 22.8 | 29.5 | 23.8 | 220.4 | 24.5    |
| N or O.....                   | do.           | do.            | 3.3  | 23.9 | 4.0  | 22.0 | 20.7 | 29.8 | 30.2 | 22.2 | 33.3 | 22.7 | 208.8 | 23.2    |
| Average.....                  |               |                |      | 25.2 | 5.1  | 21.8 | 20.4 | 29.9 | 30.0 | 23.0 | 30.7 | 21.8 | 207.9 | 23.1    |
| 1.....                        | Corn          | Disked         | 3.0  | 24.4 | 0    | 23.5 | 1.2  | 28.5 | 22.2 | 26.3 | 27.0 | 7.2  | 160.3 | 17.8    |
| 2a.....                       | do.           | Spring plowed  | 2.2  | 28.3 | 0    | 24.5 | 4.0  | 29.5 | 19.3 | 19.3 | 26.8 | 7.8  | 159.5 | 17.7    |
| 2b.....                       | do.           | do.            |      |      |      | 14.7 | 1.7  | 26.7 | 20.3 | 17.7 | 21.8 | 13.3 | 101.5 | 16.9    |
| 3.....                        | do.           | Fall plowed    | 3.8  | 26.5 | 0    | 24.2 | 4.0  | 29.3 | 20.5 | 24.5 | 27.5 | 5.7  | 162.2 | 18.0    |
| 4.....                        | Oats          | do.            | 6.8  | 23.0 | 0    | 23.7 | 0    | 29.2 | 22.7 | 20.2 | 21.2 | 4.8  | 145.1 | 16.1    |
| 5a.....                       | Fallow        | Fallowed       | 4.3  | 30.3 | 5.0  | 23.7 | 20.5 | 34.0 | 24.2 | 27.3 | 29.8 | 25.2 | 220.0 | 24.4    |
| 5b.....                       | do.           | do.            |      |      |      | 26.7 | 10.2 | 32.2 | 18.2 | 23.7 | 32.5 | 19.7 | 136.5 | 22.8    |
| 8.....                        | Oats          | Fall plowed    | 7.8  | 21.6 | 0    | 24.3 | 1.5  | 29.5 | 14.8 | 22.7 | 27.5 | 5.2  | 147.1 | 16.3    |
| 9a.....                       | do.           | Spring plowed  | 7.0  | 23.4 | .4   | 22.2 | 0    | 28.0 | 16.5 | 14.7 | 21.5 | 9.7  | 136.4 | 15.2    |
| 9b.....                       | do.           | do.            |      |      |      | 12.7 | 0    | 29.2 | 16.7 | 20.8 | 19.8 | 13.5 | 100.0 | 16.7    |
| 13.....                       | Corn          | Disked         | 5.8  | 22.5 | .2   | 25.0 | 3.0  | 29.8 | 20.3 | 25.5 | 24.3 | 9.2  | 159.8 | 17.8    |
| 14.....                       | do.           | do.            | 5.8  | 26.4 | .3   | 21.8 | 6.2  | 31.0 | 23.3 | 23.0 | 28.2 | 15.5 | 175.7 | 19.5    |
| 15.....                       | Winter rye    | Green manured  | 9.3  | 27.8 | 3.3  | 21.3 | 11.3 | 34.7 | 26.0 | 24.2 | 33.2 | 24.0 | 205.8 | 22.9    |
| 16.....                       | Corn          | Disked         | 7.2  | 25.7 | .1   | 24.2 | 4.0  | 27.2 | 23.8 | 27.0 | 32.5 | 12.0 | 176.5 | 19.6    |
| 17.....                       | Peas          | Green manured  | 7.0  | 27.7 | 4.6  | 25.3 | 6.2  | 33.5 | 29.8 | 32.5 | 39.0 | 19.7 | 218.3 | 24.3    |
| 18.....                       | Fallow        | Fallowed       | 4.7  | 30.2 | 3.0  | 24.3 | 11.2 | 31.7 | 21.8 | 28.3 | 38.0 | 25.8 | 214.6 | 23.8    |
| 19.....                       | Corn          | Disked         | 6.0  | 23.3 | .2   | 26.7 | 6.5  | 33.2 | 24.5 | 24.3 | 29.5 | 14.8 | 183.0 | 20.3    |
| 41.....                       | do.           | do.            | 6.0  | 23.2 | .1   | 21.2 | 0    | 24.8 | 19.7 | 22.5 | 28.8 | 7.3  | 147.6 | 16.4    |
| 42.....                       | do.           | do.            | 8.3  | 22.5 | .3   | 23.8 | 1.7  | 30.3 | 19.7 | 22.7 | 28.7 | 8.2  | 157.9 | 17.5    |
| 44.....                       | do.           | do.            |      |      |      | 16.0 | 0    | 27.0 | 24.0 | 25.5 | 29.7 | 15.7 | 121.9 | 20.3    |
| 48.....                       | Sorgo         | Spring plowed  | 5.0  | 18.7 | .3   | 21.3 | 2.3  | 24.3 | 16.5 | 14.5 | 21.8 | 5.5  | 125.2 | 13.9    |
| 58.....                       | Oats          | Fall plowed    |      |      |      | 31.7 | 0    | 32.8 | 14.3 | 23.2 | 23.5 | 3.3  | 97.1  | 16.2    |
| 67.....                       | do.           | Spring plowed  | 7.7  | 25.3 | .2   | 26.2 | 0    | 33.8 | 17.7 | 20.7 | 19.7 | 3.8  | 147.4 | 16.4    |
| 68.....                       | Corn          | Disked         | 5.7  | 27.2 | .2   | 26.8 | 0    | 27.3 | 20.7 | 28.3 | 29.0 | 7.2  | 166.7 | 18.5    |
| 69.....                       | do.           | do.            | 8.3  | 25.2 | .9   | 23.8 | 4.3  | 33.5 | 24.5 | 25.0 | 29.7 | 5.8  | 172.7 | 19.2    |
| 70.....                       | do.           | do.            | 6.8  | 27.2 | .3   | 27.3 | 0    | 33.5 | 20.5 | 27.7 | 31.8 | 5.3  | 174.6 | 19.4    |
| 71.....                       | do.           | do.            | 4.7  | 24.8 | .2   | 27.2 | 3.3  | 33.7 | 24.5 | 27.3 | 27.5 | 7.0  | 175.5 | 19.5    |
| 72.....                       | Fallow        | Fallowed       | 5.2  | 23.3 | 4.1  | 24.3 | 15.7 | 27.7 | 26.3 | 23.0 | 29.8 | 14.2 | 188.4 | 20.9    |
| 247.....                      | Flax          | Spring plowed  | 5.0  | 25.9 | 0    | 24.0 | 1.7  | 30.2 | 16.8 | 24.5 | 26.3 | 7.2  | 156.6 | 17.4    |
| 570.....                      | Fallow        | Fallowed       | 3.5  | 24.0 | 4.4  | 28.5 | 21.2 | 35.3 | 29.2 | 29.2 | 31.8 | 23.3 | 226.9 | 25.2    |
| Average.....                  |               |                |      | 25.1 | 11.4 | 24.4 | 4.7  | 30.4 | 21.3 | 23.9 | 27.9 | 11.6 | 162.0 | 19.0    |
| <b>OATS</b>                   |               |                |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Oats          | Spring plowed  | 27.2 | 50.6 | .1   | 48.8 | 3.4  | 38.4 | 38.8 | 52.5 | 41.9 | 16.9 | 291.4 | 32.4    |
| B.....                        | do.           | Fall plowed    | 26.3 | 53.1 | 0    | 51.9 | 0    | 42.5 | 44.4 | 51.9 | 50.6 | 12.8 | 307.2 | 34.1    |
| E.....                        | do.           | Subsoiled      | 26.9 | 52.5 | 0    | 52.5 | 0    | 44.4 | 44.4 | 50.0 | 49.7 | 10.3 | 303.8 | 33.8    |
| F.....                        | do.           | Fall listed    | 27.8 | 54.5 | .1   | 46.6 | 0    | 42.8 | 27.8 | 47.5 | 45.0 | 12.8 | 277.1 | 30.8    |
| Average.....                  |               |                |      | 52.7 | .1   | 50.0 | .9   | 42.0 | 38.9 | 50.5 | 46.8 | 13.2 | 294.9 | 32.8    |
| C or D.....                   | Fallow        | Fallowed       | 24.7 | 61.3 | 2.2  | 55.3 | 14.7 | 50.6 | 65.6 | 58.4 | 64.4 | 46.9 | 419.4 | 46.6    |
| 1.....                        | Wheat         | Fall plowed    | 23.4 | 55.8 | 0    | 46.3 | 1.6  | 40.0 | 49.4 | 56.3 | 50.6 | 19.4 | 319.4 | 35.5    |
| 2a.....                       | do.           | Spring plowed  | 24.4 | 55.3 | .8   | 52.2 | 6.6  | 48.4 | 45.3 | 53.4 | 50.9 | 25.6 | 338.5 | 37.6    |
| 2b.....                       | do.           | do.            |      |      |      | 30.6 | 2.5  | 47.2 | 35.6 | 40.0 | 39.1 | 21.9 | 186.3 | 31.1    |
| 3.....                        | do.           | Fall plowed    | 20.3 | 55.3 | 0    | 56.3 | 1.3  | 50.3 | 35.0 | 60.6 | 54.1 | 9.7  | 322.6 | 35.8    |
| 4.....                        | Corn          | Disked         | 19.1 | 56.7 | 0    | 50.0 | 6.6  | 43.4 | 52.2 | 60.0 | 53.4 | 15.0 | 337.3 | 37.5    |
| 5a.....                       | Wheat         | Fall plowed    | 23.1 | 57.2 | 0    | 60.3 | 3.1  | 61.6 | 43.1 | 65.6 | 60.3 | 14.7 | 370.9 | 41.2    |
| 5b.....                       | do.           | do.            |      |      |      | 63.4 | 0    | 73.1 | 33.1 | 59.1 | 62.8 | 13.8 | 241.9 | 40.3    |
| 6.....                        | Barley        | do.            | 21.3 | 57.7 | 0    | 52.5 | 1.3  | 54.4 | 49.4 | 61.3 | 51.6 | 10.6 | 338.8 | 37.6    |
| 7a.....                       | Corn          | Spring plowed  | 21.9 | 61.1 | .3   | 52.2 | 4.7  | 49.7 | 48.4 | 43.8 | 55.0 | 29.1 | 344.3 | 38.3    |
| 7b.....                       | do.           | do.            |      |      |      | 64.4 | 9.4  | 57.5 | 52.2 | 52.8 | 64.4 | 32.2 | 268.5 | 44.8    |
| 8.....                        | Fallow        | Fallowed       | 21.9 | 58.9 | 2.8  | 58.4 | 25.3 | 39.1 | 66.3 | 62.2 | 63.1 | 44.4 | 420.5 | 46.7    |
| 9a.....                       | Corn          | Spring plowed  | 21.6 | 59.5 | 0    | 52.8 | 11.9 | 44.1 | 45.0 | 47.8 | 54.4 | 23.4 | 338.9 | 37.7    |
| 9b.....                       | do.           | do.            |      |      |      | 30.3 | 2.5  | 57.2 | 49.1 | 48.4 | 54.4 | 24.4 | 236.0 | 39.3    |
| 13.....                       | Wheat         | do.            | 21.6 | 55.0 | .1   | 49.4 | 2.8  | 46.3 | 41.6 | 46.3 | 45.3 | 18.1 | 304.9 | 33.9    |
| 14.....                       | Winter rye    | Green manured  | 27.2 | 52.5 | 1.1  | 48.1 | 19.1 | 43.8 | 62.8 | 65.9 | 71.9 | 50.6 | 415.8 | 46.2    |
| 15.....                       | Corn          | Disked         | 29.7 | 61.9 | .2   | 57.2 | 10.3 | 48.4 | 51.9 | 53.1 | 66.9 | 34.7 | 384.6 | 42.7    |
| 16.....                       | Peas          | Green manured  | 25.6 | 69.4 | 3.0  | 44.1 | 13.1 | 46.6 | 64.1 | 55.3 | 70.6 | 29.1 | 395.3 | 43.9    |
| 17.....                       | Corn          | Disked         | 27.8 | 60.8 | 0    | 54.7 | 9.4  | 45.0 | 60.6 | 58.8 | 71.9 | 26.6 | 387.8 | 43.1    |
| 18.....                       | do.           | do.            | 24.4 | 59.1 | 0    | 55.9 | 4.4  | 49.1 | 59.4 | 57.2 | 69.1 | 30.6 | 384.8 | 42.8    |
| 19.....                       | Fallow        | Fallowed       | 26.3 | 54.4 | 3.3  | 56.6 | 22.8 | 47.5 | 58.1 | 64.4 | 71.9 | 41.9 | 420.9 | 46.8    |
| 41.....                       | Bromegrass    | Fall plowed    | 22.5 | 62.8 | 0    | 42.2 | 0    | 59.7 | 38.1 | 55.9 | 48.4 | 9.1  | 316.2 | 35.1    |
| 42.....                       | Alfalfa       | do.            | 22.2 | 53.9 | 0    | 39.7 | 0    | 47.8 | 44.1 | 61.9 | 50.6 | 4.4  | 302.4 | 33.6    |
| 47.....                       | Sorgo         | Spring plowed  |      |      |      | 62.2 | 8.1  | 63.1 | 48.1 | 66.6 | 71.3 | 42.2 | 299.4 | 49.9    |
| 58.....                       | Wheat         | do.            | 14.1 | 48.0 | .1   | 47.8 | 4.4  | 49.7 | 39.4 | 36.6 | 46.3 | 12.2 | 284.5 | 31.6    |
| 67.....                       | Sorgo         | Disked         |      |      |      | 66.6 | 9.4  | 51.3 | 44.4 | 57.5 | 68.8 | 26.3 | 257.7 | 43.0    |
| 68.....                       | do.           | do.            | 23.4 | 60.8 | 0    | 56.3 | 7.2  | 54.4 | 53.8 | 66.3 | 73.8 | 14.4 | 387.0 | 43.0    |
| 69.....                       | Wheat         | Fall plowed    | 14.4 | 50.6 | 0    | 45.3 | 0    | 55.9 | 23.8 | 62.5 | 55.6 | 4.7  | 298.4 | 33.2    |
| 70.....                       | do.           | do.            | 22.5 | 50.0 | 0    | 53.8 | 0    | 55.3 | 30.0 | 58.4 | 59.4 | 8.8  | 315.7 | 35.1    |
| 71.....                       | do.           | do.            | 18.1 | 62.0 | 0    | 64.1 | 0    | 53.1 | 48.1 | 65.3 | 57.8 | 3.1  | 353.5 | 39.3    |
| 72.....                       | Fallow        | Fallowed       | 18.4 | 59.7 | 3.1  | 57.2 | 34.4 | 57.5 | 52.2 | 70.9 | 82.5 | 41.9 | 459.4 | 51.0    |
| 114.....                      | Corn          | Disked         | 10.9 | 50.2 | .1   | 48.4 | 10.3 | 46.9 | 50.9 | 54.4 | 61.3 | 23.4 | 345.9 | 38.4    |
| 115.....                      | Winter rye    | Green manured  | 26.6 | 54.1 | 1.1  | 47.5 | 18.1 | 42.8 | 52.5 | 57.2 | 67.5 | 48.4 | 389.2 | 43.2    |
| 116.....                      | Corn          | Disked         | 21.9 | 61.3 | 0    | 52.8 | 10.6 | 47.5 | 45.6 | 52.5 | 67.2 | 25.0 | 362.5 | 40.3    |
| 117.....                      | Peas          | Green manured  | 25.0 | 59.1 | 1.9  | 47.2 | 12.5 | 42.5 | 54.7 | 55.9 | 68.8 | 35.0 | 377.6 | 42.0    |
| 118.....                      | Corn          | Disked         | 27.5 | 63.3 | .1   | 52.2 | 6.6  | 42.5 | 53.1 | 57.5 | 65.6 | 29.1 | 370.0 | 41.1    |
| 119.....                      | do.           | do.            | 25.3 | 57.7 | 0    | 54.7 | 24.1 | 43.4 | 52.5 | 61.6 | 67.5 | 22.5 | 384.0 | 42.7    |
| 131.....                      | Fallow        | Fallowed       | 25.2 | 54.2 | .8   | 49.7 | 25.9 | 40.0 | 45.3 | 53.1 | 69.7 | 54.7 | 393.4 | 43.7    |
| 132a.....                     | Sweetclover   | Green manured  | 26.3 | 52.2 | .3   | 47.8 | 24.1 | 40.0 | 54.4 | 56.3 | 72.8 | 36.3 | 384.2 | 42.7    |
| 132b.....                     | Corn          | Disked         | 23.4 | 61.9 | .3   | 50.6 | 19.7 | 50.6 | 59.7 | 55.9 | 62.8 | 37.5 | 399.0 | 44.3    |
| 135.....                      | do.           | do.            |      |      |      | 31.3 | 2.2  | 36.6 | 56.3 | 46.3 | 40.9 | 23.4 | 205.7 | 34.3    |
| 248.....                      | Flax          | Spring plowed  | 25.9 | 55.8 | .1   | 56.9 | 4.4  | 50.9 | 42.8 | 51.9 | 57.8 | 20.6 | 341.2 | 37.9    |
| 258.....                      | Wheat         | do.            | 23.8 | 55.2 | .1   | 47.8 | 10.0 | 42.8 | 35.9 | 54.7 | 42.5 | 14.4 | 303.4 | 33.7    |



## CROP YIELDS AT THE SHERIDAN (WYO.) FIELD STATION—Continued

TABLE 58.—Annual acre yields of specified crops grown in rotations on individual plots at Sheridan, Wyo., in one or more years from 1917 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1917  | 1918  | 1919 | 1920  | 1921  | 1922  | 1923  | 1924  | 1925              | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|------|-------|-------|-------|-------|-------|-------------------|-------|--------|---------|
| <b>OATS—continued</b>         |               |                |       |       |      |       |       |       |       |       |                   |       |        |         |
| 576                           | Oats          | Disked         | 23.8  | 62.0  | .9   | 39.7  | 6.3   | 50.0  | 23.1  | 25.6  | <sup>2</sup> 53.1 | 22.5  | 283.2  | 31.5    |
| 577                           | do.           | Fall plowed    | 25.3  | 59.7  | 0    | 45.9  | 1.3   | 46.6  | 40.0  | 59.1  | 57.5              | 6.9   | 317.0  | 35.2    |
|                               | do.           | Disked         | 25.6  | 57.7  | .1   | 50.9  | 6.6   | 53.8  | 37.2  | 53.8  | 39.1              | 19.4  | 318.6  | 35.4    |
|                               | do.           | Fall plowed    | 30.3  | 62.0  | 0    | 45.9  | 1.3   | 56.6  | 35.6  | 51.9  | 60.3              | 4.4   | 318.0  | 35.3    |
| 578                           | do.           | Disked         | 24.1  | 66.3  | 1.6  | 33.1  | 4.4   | 52.5  | 45.0  | 49.1  | 43.8              | 19.1  | 314.9  | 35.0    |
|                               | do.           | do.            | 26.3  | 58.6  | .1   | 59.7  | 5.3   | 43.1  | 28.4  | 50.3  | 33.1              | 6.9   | 285.5  | 31.7    |
| Average                       |               |                |       | 57.8  | .5   | 50.8  | 8.6   | 49.4  | 46.6  | 55.5  | 59.0              | 23.8  | 334.2  | 39.3    |
| <b>CORN TOTAL</b>             |               |                |       |       |      |       |       |       |       |       |                   |       |        |         |
| A                             | Corn          | Spring plowed  | 2,430 | 4,880 | 100  | 3,000 | 1,650 | 3,750 | 5,120 | 3,800 | 3,330             | 2,890 | 28,520 | 3,169   |
| B                             | do.           | Fall plowed    | 2,600 | 4,840 | 10   | 2,900 | 1,350 | 3,750 | 6,340 | 4,080 | 3,860             | 2,870 | 30,000 | 3,333   |
| E                             | do.           | Subsoiled      | 2,480 | 4,750 | 40   | 3,100 | 1,000 | 3,700 | 5,840 | 3,840 | 3,560             | 3,010 | 28,680 | 3,187   |
| F                             | do.           | Spring listed  | 1,900 | 4,620 | 20   | 600   | 1,960 | 1,400 | 4,080 | 2,550 | 2,380             | 1,970 | 19,580 | 2,176   |
| Average                       |               |                |       | 4,773 | 43   | 2,400 | 1,490 | 3,150 | 5,345 | 3,528 | 3,283             | 2,685 | 26,695 | 2,966   |
| C or D                        | Fallow        | Fallowed       | 2,410 | 4,480 | 630  | 3,200 | 2,680 | 3,400 | 4,560 | 3,810 | 3,360             | 3,640 | 29,760 | 3,307   |
| 1                             | Oats          | Fall plowed    | 2,500 | 5,400 | 10   | 2,700 | 550   | 3,650 | 4,420 | 3,800 | 3,310             | 1,300 | 25,140 | 2,793   |
| 2a                            | do.           | Spring plowed  | 2,140 | 5,000 | 150  | 3,050 | 1,150 | 3,150 | 4,960 | 3,900 | 3,420             | 1,480 | 26,260 | 2,918   |
| 2b                            | do.           | do.            |       |       |      | 2,800 | 950   | 3,500 | 4,600 | 3,700 | 3,090             | 2,590 | 18,430 | 3,072   |
| 3                             | do.           | do.            |       |       |      | 2,800 | 950   | 3,500 | 4,600 | 3,700 | 3,090             | 2,590 | 18,430 | 3,072   |
| 4                             | do.           | Fall plowed    | 2,440 | 5,070 | 70   | 3,300 | 1,000 | 3,000 | 5,130 | 4,050 | 3,470             | 1,500 | 26,590 | 2,954   |
| 6                             | Wheat         | do.            | 1,940 | 4,750 | 10   | 2,500 | 750   | 3,550 | 4,330 | 3,600 | 2,970             | 1,300 | 23,760 | 2,640   |
| 6a                            | Oats          | do.            | 2,030 | 4,950 | 10   | 2,900 | 700   | 4,300 | 5,060 | 4,540 | 3,340             | 1,650 | 27,450 | 3,050   |
| 7a                            | Barley        | Spring plowed  | 1,820 | 5,900 | 230  | 3,100 | 900   | 3,200 | 4,750 | 3,800 | 3,130             | 1,590 | 26,600 | 2,956   |
| 7b                            | do.           | do.            |       |       |      | 3,000 | 1,050 | 3,000 | 4,700 | 3,850 | 3,680             | 1,780 | 18,060 | 3,010   |
| 9a                            | Wheat         | do.            | 2,340 | 5,400 | 250  | 2,500 | 1,200 | 3,250 | 4,310 | 3,700 | 3,070             | 1,600 | 25,280 | 2,809   |
| 9b                            | do.           | do.            |       |       |      | 2,450 | 1,400 | 4,350 | 4,200 | 3,770 | 3,540             | 1,680 | 18,920 | 3,153   |
| 13                            | Oats          | do.            | 1,860 | 5,550 | 330  | 2,800 | 1,150 | 3,200 | 4,370 | 3,500 | 3,260             | 1,500 | 25,660 | 2,851   |
| 14                            | do.           | do.            | 2,350 | 5,120 | 360  | 3,050 | 1,750 | 4,020 | 5,080 | 4,370 | 3,780             | 2,230 | 29,760 | 3,307   |
| 15                            | Wheat         | do.            | 3,160 | 4,860 | 330  | 3,250 | 2,150 | 3,490 | 5,290 | 4,380 | 3,540             | 2,450 | 29,740 | 3,364   |
| 16                            | do.           | do.            | 2,830 | 5,100 | 340  | 3,300 | 1,170 | 4,000 | 4,780 | 4,280 | 3,290             | 1,960 | 28,100 | 3,132   |
| 17                            | Wheat         | do.            | 3,170 | 5,650 | 620  | 3,200 | 1,980 | 4,250 | 4,630 | 4,310 | 3,570             | 2,420 | 30,630 | 3,403   |
| 18                            | do.           | do.            | 2,520 | 5,500 | 450  | 2,500 | 1,900 | 3,600 | 4,390 | 3,800 | 3,100             | 2,000 | 27,300 | 3,033   |
| 19                            | Oats          | do.            | 1,670 | 5,250 | 250  | 3,000 | 1,500 | 3,500 | 5,340 | 3,950 | 3,390             | 1,770 | 27,950 | 3,106   |
| 41                            | do.           | do.            | 2,300 | 5,000 | 110  | 2,150 | 750   | 3,050 | 4,730 | 3,250 | 2,790             | 1,280 | 23,110 | 2,568   |
| 42                            | do.           | do.            | 2,770 | 4,960 | 380  | 2,800 | 1,250 | 3,700 | 4,540 | 3,850 | 3,430             | 1,490 | 26,400 | 2,933   |
| 44                            | Sorgo         | Fall plowed    |       |       |      | 2,350 | 800   | 4,600 | 5,250 | 3,890 | 4,340             | 1,800 | 20,680 | 3,447   |
| 47                            | Oats          | do.            |       |       |      | 3,100 | 400   | 2,550 | 5,020 | 4,050 | 4,020             | 1,450 | 17,490 | 2,915   |
| 67                            | Wheat         | Spring plowed  | 2,090 | 5,150 | 80   | 3,300 | 1,450 | 3,700 | 5,390 | 4,400 | 3,330             | 1,310 | 28,110 | 3,123   |
| 68                            | Oats          | do.            | 1,660 | 4,500 | 20   | 3,100 | 1,300 | 3,800 | 5,350 | 4,250 | 3,610             | 1,930 | 27,660 | 3,096   |
| 69                            | do.           | do.            | 2,290 | 5,650 | 430  | 3,330 | 1,550 | 3,000 | 5,390 | 4,450 | 3,340             | 1,690 | 28,830 | 3,203   |
| 70                            | do.           | do.            | 3,040 | 5,090 | 270  | 4,900 | 1,100 | 4,100 | 5,010 | 4,350 | 3,500             | 1,520 | 29,840 | 3,316   |
| 71                            | do.           | do.            | 1,560 | 5,550 | 280  | 2,300 | 1,300 | 3,200 | 5,140 | 3,550 | 3,480             | 1,230 | 26,030 | 2,892   |
| 72                            | do.           | do.            | 1,230 | 4,600 | 310  | 2,200 | 1,500 | 3,250 | 4,590 | 3,350 | 2,850             | 1,620 | 24,270 | 2,697   |
| 85a                           | Winter wheat  | Fall plowed    | 2,420 | 5,300 | 80   | 2,600 | 850   | 2,650 | 3,750 | 3,500 | 3,330             | 1,600 | 23,660 | 2,629   |
| 85b                           | do.           | do.            |       |       |      | 2,550 | 450   | 3,650 | 4,880 | 3,800 | 3,100             | 1,450 | 16,830 | 2,895   |
| 114                           | Oats          | Spring plowed  | 3,100 | 4,970 | 200  | 3,700 | 1,700 | 2,900 | 5,070 | 4,150 | 3,570             | 2,300 | 28,560 | 3,173   |
| 115                           | Winter wheat  | do.            | 2,600 | 4,950 | 400  | 2,700 | 1,500 | 3,250 | 4,570 | 3,870 | 3,070             | 1,890 | 26,200 | 2,911   |
| 116                           | Oats          | do.            | 3,020 | 4,700 | 250  | 3,650 | 1,300 | 3,050 | 4,910 | 4,220 | 3,210             | 2,610 | 27,830 | 3,092   |
| 117                           | Winter wheat  | do.            | 2,960 | 4,950 | 340  | 2,750 | 1,800 | 3,900 | 4,870 | 4,220 | 3,200             | 2,400 | 28,430 | 3,159   |
| 118                           | do.           | do.            | 2,420 | 4,670 | 430  | 3,000 | 1,800 | 3,350 | 5,220 | 4,100 | 2,810             | 2,400 | 27,780 | 3,087   |
| 119                           | Oats          | do.            | 2,580 | 4,800 | 350  | 3,450 | 1,400 | 3,250 | 4,650 | 3,970 | 3,020             | 2,320 | 27,210 | 3,023   |
| 131                           | do.           | do.            | 2,550 | 5,200 | 400  | 3,600 | 1,600 | 3,150 | 4,420 | 3,500 | 2,660             | 2,430 | 26,960 | 2,996   |
| 132a                          | Winter wheat  | do.            | 3,040 | 4,700 | 300  | 2,700 | 2,270 | 3,450 | 4,760 | 4,560 | 3,660             | 1,950 | 28,350 | 3,150   |
| 132b                          | do.           | do.            |       |       |      | 2,000 | 1,370 | 3,550 | 4,240 | 2,600 | 3,010             | 2,020 | 16,790 | 2,798   |
| 135                           | Sweetclover   | do.            |       |       |      | 2,750 | 800   | 2,750 | 4,880 | 3,650 | 3,110             | 1,510 | 16,700 | 2,783   |
| 243                           | Flax          | do.            | 3,020 | 4,850 | 260  | 4,500 | 1,350 | 3,500 | 4,430 | 3,760 | 3,570             | 1,990 | 28,210 | 3,134   |
| 244                           | do.           | Fall plowed    | 3,030 | 4,630 | 20   | 3,400 | 1,000 | 3,700 | 5,560 | 4,240 | 3,720             | 2,040 | 28,310 | 3,146   |
| 245                           | do.           | Spring plowed  | 2,910 | 4,900 | 90   | 3,800 | 1,150 | 3,700 | 4,490 | 4,100 | 3,550             | 2,470 | 28,310 | 3,146   |
| 246                           | do.           | do.            | 2,520 | 4,650 | 140  | 3,200 | 1,700 | 3,600 | 4,850 | 4,590 | 3,530             | 2,050 | 28,310 | 3,146   |
| Average                       |               |                |       | 5,067 | 244  | 2,518 | 1,272 | 3,473 | 4,786 | 3,942 | 3,343             | 1,849 | 25,507 | 3,020   |
| <b>CORN GRAIN</b>             |               |                |       |       |      |       |       |       |       |       |                   |       |        |         |
| A                             | Corn          | Spring plowed  | 9.6   | 32.3  | 0    | 18.8  | 0     | 23.6  | 42.4  | 27.1  | 27.0              | 20.5  | 192.3  | 21.4    |
| B                             | do.           | Fall plowed    | 12.1  | 32.4  | 0    | 19.2  | 0     | 24.6  | 49.9  | 27.5  | 30.9              | 16.3  | 200.8  | 22.3    |
| E                             | do.           | Subsoiled      | 14.5  | 35.5  | 0    | 20.3  | 0     | 25.1  | 47.7  | 26.1  | 29.4              | 18.1  | 202.2  | 22.5    |
| F                             | do.           | Spring listed  | 11.5  | 28.3  | 0    | 3.2   | .9    | 10.9  | 36.9  | 19.4  | 21.9              | 16.3  | 137.8  | 15.3    |
| Average                       |               |                |       | 32.1  | 0    | 15.4  | .2    | 21.1  | 44.2  | 25.0  | 27.5              | 17.8  | 183.3  | 20.4    |
| C or D                        | Fallow        | Fallowed       | 11.1  | 28.1  | 0    | 19.9  | 15.4  | 23.4  | 42.3  | 27.9  | 28.7              | 23.9  | 209.6  | 23.3    |
| 1                             | Oats          | Fall plowed    | 9.9   | 31.6  | 0    | 15.3  | 0     | 23.0  | 35.3  | 23.9  | 27.3              | 0     | 156.4  | 17.4    |
| 2a                            | do.           | Spring plowed  | 7.9   | 31.7  | 0    | 16.9  | 0     | 22.3  | 35.7  | 23.1  | 26.7              | 8.1   | 164.8  | 18.3    |
| 2b                            | do.           | do.            |       |       |      | 13.2  | 0     | 28.6  | 38.6  | 24.0  | 24.9              | 19.2  | 135.3  | 22.6    |
| 3                             | do.           | Fall plowed    | 11.3  | 30.3  | 0    | 19.3  | 0     | 23.4  | 39.4  | 25.6  | 27.4              | 0     | 165.4  | 18.4    |
| 4                             | Wheat         | do.            | 8.5   | 26.3  | 0    | 16.0  | 0     | 22.6  | 34.6  | 22.9  | 21.7              | 0     | 111.1  | 16.0    |
| 6                             | Oats          | do.            | 7.1   | 36.0  | 0    | 16.1  | 0     | 27.3  | 39.6  | 29.9  | 26.3              | 0     | 175.2  | 19.5    |
| 7a                            | Barley        | Spring plowed  | 7.5   | 35.1  | 0    | 16.3  | 0     | 21.4  | 34.6  | 20.7  | 22.6              | 9.2   | 159.9  | 17.8    |
| 7b                            | do.           | do.            |       |       |      | 20.0  | 0     | 25.3  | 37.9  | 21.6  | 28.3              | 13.1  | 129.2  | 21.5    |
| 9a                            | Wheat         | do.            | 11.7  | 30.9  | 0    | 13.7  | 0     | 21.0  | 34.9  | 22.9  | 22.4              | 8.7   | 154.5  | 17.2    |
| 9b                            | do.           | do.            |       |       |      | 12.9  | 0     | 31.1  | 34.3  | 25.1  | 28.4              | 12.4  | 131.3  | 21.9    |
| 13                            | Oats          | do.            | 8.1   | 31.2  | 0    | 10.8  | 0     | 20.0  | 35.1  | 23.6  | 24.4              | 8.0   | 153.1  | 17.0    |
| 14                            | do.           | do.            | 12.1  | 37.1  | 0    | 20.0  | 0     | 26.0  | 42.6  | 26.7  | 30.1              | 15.7  | 198.5  | 22.1    |
| 15                            | Wheat         | do.            | 18.8  | 35.1  | 0    | 21.6  | 0     | 24.4  | 42.0  | 31.0  | 28.4              | 17.3  | 199.8  | 22.2    |
| 16                            | Oats          | do.            | 16.9  | 34.8  | 0    | 22.1  | 0     | 25.7  | 39.7  | 30.3  | 27.0              | 13.7  | 193.3  | 21.5    |
| 17                            | Wheat         | do.            | 17.2  | 36.3  | 0    | 19.9  | 0     | 29.3  | 38.3  | 29.3  | 30.3              | 18.9  | 202.3  | 22.5    |
| 18                            | do.           | do.            | 10.5  | 35.9  | 0    | 13.5  | 4.1   | 24.6  | 37.0  | 24.4  | 27.9              | 14.0  | 181.7  | 20.2    |
| 19                            | Oats          | do.            | 7.7   | 36.3  | 0    | 14.9  | 0     | 23.4  | 42.0  | 24.6  | 25.6              | 12.3  | 179.1  | 19.9    |
| 41                            | do.           | do.            | 11.6  | 35.6  | 0    | 8.9   | 0     | 22.1  | 38.3  | 21.3  | 25.6              | 7.7   | 159.5  | 17.7    |
| 42                            | do.           | do.            | 19.7  | 33.9  | 0    | 13.7  | 0     | 24.9  | 37.0  | 25.0  | 28.3              | 9.2   | 172.0  | 19.1    |
| 44                            | Sorgo         | Fall plowed    |       |       |      | 12.7  | 0     | 27.4  | 40.0  | 22.5  | 32.0              | 0     | 121.9  | 20.3    |
| 47                            | Oats          | do.            |       |       |      | 20.8  | 0     | 17.9  | 42.1  | 28.1  | 33.1              | 0     | 121.2  | 20.2    |

<sup>2</sup> Rotation 576 spring plowed in 1925.<sup>3</sup> Rotation 135 plowed July 19, 1923.



## CROP YIELDS AT THE SHERIDAN (WYO.) FIELD STATION—Continued

TABLE 58.—Annual acre yields of specified crops grown in rotations on individual plots at Sheridan, Wyo., in one or more years from 1917 to 1926—Continued

| Crop and rotation No. or plot | Previous crop     | Tillage method     | 1917  | 1918  | 1919 | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|-------------------|--------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>CORN GRAIN—CON.</b>        |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 67.....                       | Wheat.....        | Spring plowed..... | 6.4   | 31.9  | 0    | 14.4  | 0     | 23.1  | 38.4  | 24.7  | 22.6  | 7.5   | 162.6  | 18.1    |
| 68.....                       | Oats.....         | do.....            | 4.0   | 26.7  | 0    | 15.6  | 0     | 16.7  | 37.9  | 23.8  | 23.7  | 12.4  | 156.8  | 17.4    |
| 69.....                       | do.....           | do.....            | 10.3  | 32.0  | 0    | 16.8  | 0     | 21.6  | 42.0  | 24.7  | 24.1  | 11.2  | 172.4  | 19.2    |
| 70.....                       | do.....           | do.....            | 7.2   | 32.1  | 0    | 16.1  | 0     | 27.3  | 40.1  | 23.8  | 27.9  | 8.3   | 175.6  | 19.5    |
| 71.....                       | do.....           | do.....            | 4.7   | 32.8  | 0    | 11.7  | 0     | 24.1  | 40.7  | 20.7  | 24.7  | 7.7   | 162.4  | 18.0    |
| 72.....                       | Wheat.....        | do.....            | 4.0   | 23.1  | 0    | 12.8  | 0     | 21.1  | 39.6  | 21.5  | 20.0  | 10.9  | 149.0  | 16.6    |
| 85a.....                      | Winter wheat..... | Fall plowed.....   | 6.1   | 32.0  | 0    | 16.1  | 0     | 16.1  | 28.7  | 25.1  | 24.7  | 0     | 142.7  | 15.9    |
| 85b.....                      | do.....           | do.....            |       |       |      | 12.0  | 0     | 21.4  | 34.0  | 23.3  | 19.3  | 0     | 98.0   | 16.3    |
| 114.....                      | Oats.....         | Spring plowed..... | 11.3  | 36.1  | 0    | 22.5  | 0     | 19.7  | 41.6  | 28.5  | 29.6  | 17.3  | 195.3  | 21.7    |
| 115.....                      | Winter wheat..... | do.....            | 8.9   | 33.5  | 0    | 18.1  | 0     | 21.6  | 39.3  | 28.8  | 26.0  | 13.9  | 181.2  | 20.1    |
| 116.....                      | Oats.....         | do.....            | 10.4  | 32.8  | 0    | 22.5  | 0     | 21.3  | 41.1  | 29.4  | 25.9  | 18.8  | 191.8  | 21.3    |
| 117.....                      | Winter wheat..... | do.....            | 12.8  | 33.2  | 0    | 17.3  | 0     | 24.3  | 39.0  | 30.8  | 25.7  | 15.3  | 185.6  | 20.6    |
| 118.....                      | do.....           | do.....            | 8.8   | 28.7  | 0    | 18.3  | 0     | 22.9  | 42.0  | 26.4  | 20.9  | 16.7  | 175.9  | 19.5    |
| 119.....                      | Oats.....         | do.....            | 8.0   | 31.2  | 0    | 22.3  | 0     | 23.7  | 38.6  | 25.3  | 21.7  | 16.3  | 179.1  | 19.9    |
| 131.....                      | do.....           | do.....            | 11.3  | 33.3  | 0    | 20.9  | 0     | 22.7  | 38.3  | 21.5  | 20.9  | 15.7  | 173.3  | 19.3    |
| 132a.....                     | Winter wheat..... | do.....            | 17.7  | 26.4  | 0    | 15.9  | 4.6   | 21.0  | 39.6  | 28.6  | 29.4  | 12.7  | 178.2  | 19.8    |
| 132b.....                     | do.....           | do.....            |       |       |      | 7.6   | 5.3   | 25.4  | 36.3  | 18.9  | 23.0  | 13.1  | 122.0  | 20.3    |
| 135.....                      | Sweetclover.....  | do.....            |       |       |      | 12.8  | 0     | 17.1  | 37.6  | 21.0  | 20.1  | 6.1   | 101.9  | 17.0    |
| 243.....                      | Flax.....         | do.....            | 19.6  | 33.5  | 0    | 22.1  | 0     | 21.1  | 37.6  | 26.5  | 29.1  | 15.2  | 185.1  | 20.6    |
| 244.....                      | do.....           | Fall plowed.....   | 14.9  | 30.4  | 0    | 23.5  | 0     | 26.0  | 40.9  | 28.3  | 31.7  | 10.5  | 191.3  | 21.3    |
| 245.....                      | do.....           | Spring plowed..... | 17.6  | 35.7  | 0    | 21.1  | 0     | 24.3  | 37.0  | 27.1  | 29.3  | 16.9  | 191.4  | 21.3    |
| 246.....                      | do.....           | do.....            | 14.5  | 28.4  | 0    | 16.5  | 0     | 21.7  | 38.6  | 26.4  | 26.9  | 12.7  | 171.2  | 19.0    |
| Average.....                  |                   |                    |       | 32.3  | 0    | 17.2  | .3    | 23.2  | 38.3  | 25.2  | 26.0  | 10.4  | 163.8  | 19.4    |
| <b>BARLEY</b>                 |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Barley.....       | Spring plowed..... | 25.0  | 28.6  | 0    | 31.3  | 2.5   | 29.2  | 19.8  | 46.0  | 31.9  | 18.5  | 207.8  | 23.1    |
| B.....                        | do.....           | Fall plowed.....   | 23.3  | 26.4  | 0    | 39.4  | 0     | 36.9  | 23.8  | 48.3  | 35.6  | 7.3   | 217.7  | 24.2    |
| E.....                        | do.....           | Subsoiled.....     | 23.5  | 40.6  | 0    | 40.2  | 0     | 41.3  | 25.4  | 55.4  | 39.6  | 14.6  | 257.1  | 28.6    |
| F.....                        | do.....           | Fall listed.....   | 21.0  | 34.4  | 0    | 31.0  | 0     | 47.5  | 18.5  | 43.1  | 38.3  | 12.3  | 225.1  | 25.0    |
| Average.....                  |                   |                    |       | 32.5  | 0    | 35.5  | .6    | 38.7  | 21.9  | 48.2  | 36.4  | 13.2  | 226.9  | 25.2    |
| <b>C or D</b>                 |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
|                               | Fallow.....       | Fallowed.....      | 22.3  | 47.9  | 4.2  | 42.9  | 13.5  | 36.9  | 34.4  | 54.2  | 62.7  | 56.3  | 353.0  | 39.2    |
| 6.....                        | Corn.....         | Disked.....        | 19.6  | 42.3  | .1   | 44.0  | 3.8   | 55.2  | 36.2  | 65.0  | 54.6  | 22.9  | 324.2  | 36.0    |
| 7a.....                       | Oats.....         | Spring plowed..... | 20.6  | 40.5  | 0    | 43.3  | 3.8   | 59.6  | 25.8  | 45.2  | 40.6  | 29.4  | 288.2  | 32.0    |
| 7b.....                       | do.....           | do.....            |       |       |      | 43.1  | 2.5   | 61.5  | 29.8  | 58.5  | 49.8  | 29.0  | 231.1  | 38.5    |
| 85a.....                      | Flax.....         | Disked.....        | 22.9  | 42.8  | .4   | 40.6  | 5.0   | 56.0  | 24.2  | 61.7  | 49.2  | 23.5  | 303.4  | 33.7    |
| 85b.....                      | do.....           | do.....            |       |       |      | 24.8  | 0     | 50.2  | 11.5  | 56.7  | 47.7  | 16.7  | 182.8  | 30.5    |
| Average.....                  |                   |                    |       | 41.9  | .2   | 42.6  | 3.0   | 56.5  | 25.5  | 57.4  | 48.4  | 24.3  | 265.9  | 34.1    |
| <b>FLAX</b>                   |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| A.....                        | Flax.....         | Spring plowed..... | 2.5   | 12.3  | 0    | 7.1   | 0     | 11.1  | 2.9   | 3.2   | 1.8   | 1.8   | 40.2   | 4.5     |
| B.....                        | do.....           | Fall plowed.....   | 2.5   | 12.5  | 0    | 6.1   | 0     | 7.5   | 3.8   | 4.3   | 2.9   | 0     | 37.1   | 4.1     |
| E.....                        | do.....           | Subsoiled.....     | 3.8   | 7.5   | 0    | 6.1   | 0     | 7.1   | 3.8   | 4.6   | 3.2   | 0     | 32.3   | 3.6     |
| F.....                        | do.....           | Fall listed.....   | 3.6   | 12.6  | 0    | 4.1   | 0     | 6.1   | 4.5   | 5.2   | 4.6   | 1.3   | 38.4   | 4.3     |
| Average.....                  |                   |                    |       | 11.2  | 0    | 5.9   | 0     | 8.0   | 3.8   | 4.3   | 3.1   | .8    | 37.0   | 4.1     |
| <b>C or D</b>                 |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
|                               | Fallow.....       | Fallowed.....      | 3.8   | 7.6   | 0    | 4.1   | 0     | 12.9  | 2.9   | 6.1   | 4.3   | 4.5   | 42.4   | 4.7     |
| 85a.....                      | Corn.....         | Spring plowed..... | 4.5   | 12.9  | 0    | 9.1   | 0     | 10.2  | 7.5   | 2.3   | 7.1   | 9.3   | 58.4   | 6.5     |
| 85b.....                      | do.....           | do.....            |       |       |      | 5.7   | 0     | 13.6  | 7.7   | 5.0   | 7.9   | 5.4   | 39.6   | 6.6     |
| 243.....                      | do.....           | do.....            | 4.6   | 18.0  | 0    | 9.1   | 0     | 10.0  | 9.8   | 10.7  | 5.7   | 7.5   | 70.8   | 7.9     |
| 244.....                      | do.....           | Fall plowed.....   | 3.4   | 16.0  | 0    | 8.6   | 0     | 12.1  | 10.5  | 9.3   | 6.1   | 5.5   | 68.1   | 7.6     |
| 245.....                      | do.....           | Disked.....        | 3.4   | 15.4  | 0    | 7.5   | 0     | 9.8   | 7.7   | 5.7   | 8.2   | 5.4   | 59.7   | 6.6     |
| 246.....                      | do.....           | do.....            | 3.0   | 15.2  | 0    | 7.9   | 0     | 11.1  | 6.6   | 7.7   | 5.0   | 2.0   | 55.5   | 6.2     |
| 247.....                      | Wheat.....        | Spring plowed..... | 4.7   | 9.3   | 0    | 7.9   | 1.1   | 9.5   | 9.8   | 8.0   | 8.2   | 5.5   | 59.3   | 6.6     |
| 248.....                      | Oats.....         | do.....            | 3.9   | 14.1  | 0    | 7.9   | 0     | 14.1  | 9.1   | 8.2   | 6.8   | 4.8   | 65.0   | 7.2     |
| Average.....                  |                   |                    |       | 14.4  | 0    | 8.3   | .2    | 11.3  | 8.6   | 7.1   | 6.9   | 5.7   | 59.6   | 6.9     |
| <b>BROMEGRASS</b>             |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 41.....                       | Wheat.....        | Disked.....        | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       |
|                               | Brome-grass.....  | do.....            | 0     | 3,050 | 270  | 0     | 160   | 0     | 2,430 | 2,950 | 2,550 | 650   | 12,060 | 1,340   |
|                               | do.....           | do.....            | 0     | 2,500 | 0    | 1,770 | 320   | 0     | 1,340 | 3,900 | 1,750 | 2,050 | 13,630 | 1,514   |
| Average.....                  |                   |                    |       | 1,850 | 90   | 590   | 160   | 0     | 1,257 | 2,283 | 1,433 | 900   | 8,563  | 951     |
| <b>ALFALFA</b>                |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 42.....                       | Wheat.....        | Fall plowed.....   | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0       |
|                               | Alfalfa.....      | do.....            | 0     | 2,250 | 190  | 1,570 | 30    | 0     | 1,900 | 1,950 | 1,750 | 650   | 10,290 | 1,143   |
|                               | do.....           | do.....            | 0     | 2,400 | 50   | 2,180 | 580   | 2,420 | 2,600 | 3,200 | 1,450 | 950   | 15,830 | 1,759   |
| Average.....                  |                   |                    |       | 1,550 | 80   | 1,250 | 203   | 807   | 1,500 | 1,717 | 1,067 | 533   | 8,707  | 967     |
| <b>SWEETCLOVER</b>            |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 135.....                      | Winter wheat..... | Stubbed in.....    |       |       |      | 0     | 0     |       | 0     | 0     | 0     | 0     | 0      | 0       |
|                               | Sweetclover.....  | do.....            |       |       |      | 0     | 450   |       | 2,980 | 2,750 | 3,100 | 2,100 | 11,380 | 2,276   |
| Average.....                  |                   |                    |       |       |      |       | 225   |       | 1,490 | 1,375 | 1,550 | 1,050 | 5,090  | 1,138   |
| <b>POTATOES</b>               |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 37.....                       | Winter wheat..... | Fall plowed.....   |       | 106.7 | 0    | 30.0  | 8.0   | 120.8 | 106.7 | 107.5 | 92.5  | 39.2  | 504.7  | 63.1    |
| <b>SORGO</b>                  |                   |                    |       |       |      |       |       |       |       |       |       |       |        |         |
| 44.....                       | Wheat.....        | Spring plowed..... |       |       |      | 2,500 | 2,600 | 5,000 | 6,090 | 5,950 | 5,100 | 3,650 | 28,390 | 4,732   |
| 47.....                       | Corn.....         | do.....            |       |       |      | 4,150 | 2,450 | 4,500 | 5,520 | 5,000 | 2,850 | 3,600 | 23,920 | 3,987   |
| 48.....                       | Oats.....         | do.....            | 2,600 | 6,200 | 480  | 4,900 | 1,700 | 4,550 | 5,530 | 4,850 | 4,550 | 3,450 | 36,210 | 4,623   |
| 58.....                       | Wheat.....        | Fall plowed.....   |       |       |      | 4,600 | 570   | 5,100 | 6,340 | 6,200 | 4,650 | 2,800 | 25,660 | 4,277   |
| Average.....                  |                   |                    |       | 6,200 | 480  | 1,633 | 1,830 | 4,788 | 5,870 | 5,500 | 4,288 | 3,375 | 28,545 | 4,255   |

\* On new breaking, 1920.

## CROP YIELDS AT THE BELLE FOURCHE (S. DAK.) FIELD STATION

TABLE 59.—Annual acre yields of specified crops grown in rotations on individual plots at Belle Fourche, S. Dak., in one or more years from 1908 to 1926

[For descriptions of rotations, see pages 32-43. For climatic conditions 1908 to 1924, see Figure 18 (p. 28), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, clover, and sorghum are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop     | Tillage method         | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915  | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922  | 1923 | 1924 | 1925 | 1926 | Total | Average |      |
|-------------------------------|-------------------|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|-------|------|------|------|------|-------|---------|------|
| WINTER WHEAT                  |                   |                        |      |      |      |      |      |      |      |       |      |      |      |      |      |      |       |      |      |      |      |       |         |      |
| A.....                        | Winter wheat..... | Late fall plowed.....  | 19.0 | 0    | 0    | 0    | 0    | 16.2 | 15.1 | 34.8  | 16.1 | 3.8  | 18.3 | 0    | 0    | 9.5  | 20.8  | 28.8 | 27.7 | 26.3 | 27.3 | 27.3  | 272.7   | 15.2 |
| B.....                        | do.....           | Early fall plowed..... | 34.4 | 0    | 0    | 0    | 0    | 21.8 | 13.4 | 20.4  | 8.8  | 2.4  | 31.4 | 0    | 3.5  | 6.3  | 32.8  | 28.0 | 28.5 | 20.5 | 28.2 | 28.2  | 290.4   | 15.6 |
| E.....                        | do.....           | Subsoiled.....         | 29.3 | 0    | 0    | 0    | 0    | 18.7 | 14.7 | 25.2  | 8.5  | 2.0  | 26.2 | 0    | 2.3  | 4.8  | 30.8  | 24.3 | 20.0 | 12.7 | 25.0 | 25.0  | 261.7   | 14.5 |
| F.....                        | do.....           | Fall listed.....       | 29.3 | 0    | 0    | 0    | 0    | 13.4 | 15.2 | 41.2  | 15.2 | 4.0  | 22.3 | 0    | 0    | 4.8  | 28.2  | 24.5 | 19.7 | 16.2 | 25.0 | 25.0  | 259.0   | 14.4 |
| Average.....                  |                   |                        | 28.0 | 0    | 0    | 0    | 0    | 17.5 | 14.6 | 30.4  | 12.2 | 3.1  | 21.6 | 0    | 1.5  | 6.8  | 30.4  | 26.4 | 26.2 | 18.9 | 28.0 | 28.0  | 298.5   | 14.9 |
| C or D.....                   | Fallow.....       | Fallow.....            | 32.4 | 9.2  | 0    | 0    | 0    | 36.5 | 32.5 | 59.3  | 14.8 | 6.9  | 37.5 | 10.0 | 2.0  | 0    | 32.3  | 4.2  | 30.7 | 30.7 | 48.0 | 40.0  | 405.0   | 22.5 |
| 149.....                      | Corn.....         | Stubble in.....        |      |      |      |      |      |      |      |       |      |      |      |      |      |      | 122.0 | 18.3 | 35.3 | 27.3 | 29.3 | 29.3  | 110.2   | 27.6 |
| 409.....                      | Sorgho.....       | do.....                |      |      |      |      |      |      |      |       |      |      |      |      |      |      | 120.2 | 23.0 | 33.0 | 18.8 | 26.0 | 26.0  | 96.0    | 24.0 |
| 411.....                      | do.....           | do.....                |      |      |      |      |      |      |      |       |      |      |      |      |      |      | 122.5 | 23.0 | 29.8 | 20.0 | 27.0 | 27.0  | 99.8    | 25.0 |
| 413.....                      | Corn.....         | Standing stalks.....   |      |      |      |      |      |      |      |       |      |      |      |      |      |      | 128.2 | 22.2 | 31.5 | 31.3 | 49.7 | 49.7  | 134.7   | 33.7 |
| Average.....                  |                   |                        |      |      |      |      |      |      |      |       |      |      |      |      |      |      |       | 20.4 | 32.4 | 24.4 | 33.0 | 110.2 | 27.6    |      |
| SPRING WHEAT                  |                   |                        |      |      |      |      |      |      |      |       |      |      |      |      |      |      |       |      |      |      |      |       |         |      |
| A.....                        | Wheat.....        | Spring plowed.....     | 23.3 | 23.8 | 2.8  | 0    | 0    | 6.2  | 4.0  | 56.5  | 10.6 | 4.4  | 8.5  | 0    | 29.2 | 3.8  | 29.0  | 4.8  | 11.8 | 6.2  | 23.0 | 23.0  | 224.6   | 12.5 |
| B.....                        | do.....           | Fall plowed.....       | 23.3 | 23.3 | 0    | 0    | 0    | 7.9  | 4.8  | 57.7  | 10.8 | 2.8  | 9.8  | 0    | 28.7 | 2.0  | 30.0  | 28.5 | 19.5 | 15.2 | 29.3 | 29.3  | 270.3   | 15.0 |
| E.....                        | do.....           | Subsoiled.....         | 22.0 | 28.5 | 0    | 0    | 0    | 6.8  | 4.7  | 55.6  | 16.6 | 7.5  | 8.4  | 0    | 27.2 | 0    | 28.0  | 24.0 | 23.0 | 16.3 | 28.0 | 28.0  | 274.3   | 15.2 |
| F.....                        | do.....           | Fall listed.....       | 28.7 | 28.7 | 0    | 0    | 0    | 9.5  | 6.8  | 59.8  | 14.9 | 7.5  | 8.4  | 0    | 29.7 | 2.5  | 30.8  | 25.0 | 23.7 | 14.5 | 29.0 | 29.0  | 280.8   | 16.1 |
| Average.....                  |                   |                        | 26.1 | 26.1 | 7    | 0    | 0    | 7.6  | 5.1  | 57.4  | 13.2 | 4.9  | 7.7  | 0    | 28.7 | 2.1  | 29.5  | 21.7 | 16.8 | 13.1 | 27.3 | 27.3  | 264.8   | 14.7 |
| C or D.....                   | Fallow.....       | Fallow.....            | 32.2 | 32.2 | 5.0  | 0    | 0    | 16.8 | 15.8 | 57.2  | 18.7 | 11.1 | 35.0 | 6.2  | 29.2 | 25.0 | 31.5  | 31.0 | 23.8 | 24.5 | 45.2 | 45.2  | 408.2   | 22.7 |
| 1.....                        | Corn.....         | Disked.....            | 25.2 | 29.4 | 3.4  | 0    | 0    | 10.9 | 8.4  | 59.5  | 18.7 | 7.8  | 5.8  | 0    | 32.0 | 2.8  | 34.8  | 29.5 | 19.8 | 19.2 | 32.3 | 32.3  | 314.3   | 17.5 |
| 2.....                        | do.....           | Spring plowed.....     | 22.8 | 23.0 | 3.0  | 0    | 0    | 4.6  | 4.5  | 61.7  | 12.8 | 6.1  | 2.5  | 0    | 25.7 | 0    | 34.7  | 11.3 | 13.3 | 14.0 | 23.7 | 23.7  | 212.8   | 13.5 |
| 3.....                        | do.....           | Fall plowed.....       | 21.7 | 23.6 | 0    | 0    | 0    | 7.3  | 6.3  | 53.3  | 15.4 | 7.8  | 4.1  | 0    | 31.7 | 0    | 30.7  | 28.3 | 23.2 | 18.2 | 34.0 | 34.0  | 280.6   | 15.6 |
| 4.....                        | Oats.....         | do.....                | 25.3 | 29.7 | 0    | 0    | 0    | 9.3  | 5.6  | 56.8  | 9.3  | 4.9  | 4.1  | 0    | 31.7 | 0    | 39.7  | 28.3 | 25.2 | 21.0 | 25.0 | 25.0  | 200.6   | 16.1 |
| 5.....                        | Fallow.....       | Fallow.....            | 24.7 | 31.4 | 6.8  | 0    | 0    | 13.9 | 15.3 | 59.3  | 20.1 | 12.6 | 32.2 | 3.5  | 28.3 | 30.3 | 32.0  | 28.7 | 23.5 | 21.3 | 42.3 | 42.3  | 403.1   | 22.4 |
| 6.....                        | Oats.....         | Fall plowed.....       | 25.2 | 33.2 | 2.4  | 0    | 0    | 10.3 | 6.6  | 59.0  | 11.1 | 7.3  | 9.3  | 0    | 28.3 | 0    | 32.5  | 31.7 | 26.0 | 20.3 | 30.2 | 30.2  | 305.8   | 17.0 |
| 8.....                        | do.....           | Spring plowed.....     | 24.7 | 28.1 | 2.4  | 0    | 0    | 7.9  | 6.0  | 60.1  | 12.0 | 8.9  | 7.4  | 0    | 27.5 | 4.2  | 31.3  | 22.5 | 15.1 | 12.0 | 31.2 | 31.2  | 275.1   | 15.3 |
| 9.....                        | Corn.....         | Disked.....            | 21.7 | 31.6 | 3.1  | 0    | 0    | 6.7  | 11.3 | 56.9  | 18.0 | 9.9  | 7.8  | 0    | 33.5 | 2.5  | 32.2  | 33.8 | 25.3 | 21.0 | 28.7 | 28.7  | 324.3   | 18.0 |
| 10.....                       | do.....           | do.....                | 23.5 | 29.3 | 1.9  | 0    | 0    | 8.0  | 11.7 | 57.7  | 17.7 | 6.8  | 5.2  | 0    | 30.5 | 2.0  | 34.8  | 33.8 | 26.2 | 21.3 | 27.8 | 27.8  | 331.7   | 17.3 |
| 11.....                       | do.....           | do.....                | 25.2 | 31.6 | 3.6  | 0    | 0    | 10.8 | 9.3  | 56.7  | 22.1 | 10.3 | 7.0  | 0    | 32.7 | 2.0  | 34.7  | 29.5 | 26.2 | 23.0 | 33.8 | 33.8  | 331.7   | 17.3 |
| 12.....                       | do.....           | do.....                | 18.7 | 28.2 | 3.0  | 0    | 0    | 12.8 | 10.9 | 60.0  | 17.9 | 7.5  | 3.3  | 0    | 34.5 | 2.0  | 33.7  | 29.8 | 15.8 | 22.2 | 26.8 | 26.8  | 308.4   | 17.1 |
| 13.....                       | Winter rye.....   | Green manured.....     | 17.8 | 30.6 | 5.7  | 0    | 0    | 13.4 | 13.8 | 64.0  | 19.3 | 5.8  | 20.0 | 0    | 34.5 | 17.7 | 33.0  | 29.7 | 19.8 | 24.7 | 32.0 | 32.0  | 335.8   | 18.7 |
| 14.....                       | Corn.....         | Disked.....            | 16.2 | 28.6 | 4.3  | 0    | 0    | 11.7 | 9.5  | 60.2  | 19.3 | 9.2  | 5.0  | 0    | 33.8 | 2.0  | 34.5  | 31.7 | 20.8 | 22.0 | 29.8 | 29.8  | 321.4   | 17.9 |
| 16.....                       | Pens.....         | Green manured.....     | 18.0 | 29.9 | 1.3  | 0    | 0    | 13.5 | 11.3 | 58.7  | 18.0 | 3.5  | 11.0 | 0    | 29.8 | 19.5 | 32.2  | 29.0 | 17.5 | 17.8 | 29.7 | 29.7  | 322.7   | 17.9 |
| 17.....                       | Fallow.....       | Fallow.....            | 20.7 | 33.4 | 3.1  | 0    | 0    | 18.4 | 14.5 | 60.3  | 20.3 | 11.6 | 20.5 | 4.2  | 35.0 | 24.5 | 34.2  | 33.3 | 20.8 | 27.3 | 44.3 | 44.3  | 414.7   | 23.0 |
| 18.....                       | Corn.....         | Disked.....            | 20.7 | 33.4 | 3.1  | 0    | 0    | 18.4 | 14.5 | 60.3  | 20.3 | 11.6 | 20.5 | 4.2  | 35.0 | 24.5 | 34.2  | 33.3 | 20.8 | 27.3 | 44.3 | 44.3  | 414.7   | 23.0 |
| 19.....                       | do.....           | do.....                | 25.3 | 30.3 | 3.0  | 0    | 0    | 11.2 | 9.9  | 61.0  | 20.7 | 7.8  | 6.0  | 0    | 32.8 | 1.8  | 33.7  | 33.3 | 25.7 | 27.5 | 24.8 | 24.8  | 330.5   | 18.4 |
| 20.....                       | do.....           | do.....                | 25.5 | 35.1 | 5.2  | 0    | 0    | 11.4 | 9.3  | 57.2  | 20.7 | 11.8 | 8.7  | 0    | 25.3 | 3.5  | 33.5  | 33.8 | 26.3 | 24.5 | 23.8 | 23.8  | 320.0   | 18.3 |
| 31.....                       | Sweetclover.....  | Green manured.....     | 25.8 | 25.8 | 5.0  | 0    | 0    | 11.8 | 11.4 | 62.8  | 20.7 | 5.8  | 6.6  | 0    | 28.5 | 2.2  | 24.3  | 25.2 | 23.7 | 14.5 | 25.0 | 25.0  | 288.3   | 16.0 |
| 32.....                       | Sorgho.....       | Disked.....            | 13.8 | 20.8 | 0    | 0    | 0    | 9.4  | 9.0  | 57.1  | 16.2 | 4.5  | 12.5 | 0    | 30.5 | 0    | 30.7  | 24.0 | 18.7 | 12.8 | 30.2 | 30.2  | 280.8   | 15.6 |
| 33.....                       | Sweetclover.....  | Green manured.....     | 22.3 | 23.1 | 0    | 0    | 0    | 12.2 | 16.3 | 60.8  | 20.2 | 4.5  | 12.5 | 0    | 28.5 | 1.7  | 29.3  | 24.0 | 18.7 | 12.8 | 30.2 | 30.2  | 280.8   | 15.6 |
| 42.....                       | Corn.....         | Disked.....            | 20.8 | 30.3 | 4.0  | 0    | 0    | 8.1  | 9.2  | 55.8  | 20.8 | 5.0  | 3.6  | 0    | 27.0 | 0    | 30.3  | 28.5 | 19.7 | 15.0 | 26.2 | 26.2  | 292.3   | 16.9 |
| 43.....                       | do.....           | do.....                | 18.0 | 24.0 | 3.3  | 0    | 0    | 11.4 | 10.7 | 59.7  | 16.4 | 3.0  | 13.3 | 0    | 30.5 | 0    | 30.3  | 28.5 | 19.7 | 15.0 | 26.2 | 26.2  | 292.3   | 16.2 |
| 71.....                       | Fallow.....       | Fallow.....            | 19.3 | 33.2 | 2.2  | 0    | 0    | 16.4 | 16.7 | 53.3  | 20.3 | 10.7 | 30.5 | 3.7  | 28.2 | 22.2 | 34.7  | 30.5 | 14.7 | 25.2 | 47.2 | 47.2  | 401.8   | 22.4 |
| 72.....                       | do.....           | do.....                | 13.5 | 33.3 | 4.4  | 0    | 0    | 12.7 | 18.0 | 53.9  | 20.3 | 11.5 | 30.3 | 5.0  | 31.0 | 26.0 | 30.2  | 23.8 | 23.0 | 23.0 | 39.3 | 39.3  | 362.8   | 20.2 |
| 75.....                       | Potatoes.....     | Disked.....            | 23.3 | 27.5 | 1.7  | 0    | 0    | 12.3 | 11.3 | 55.6  | 20.8 | 7.8  | 18.8 | 5.5  | 28.3 | 14.2 | 34.0  | 34.2 | 26.2 | 22.3 | 29.0 | 29.0  | 190.8   | 27.5 |
| 408.....                      | Corn.....         | do.....                |      |      |      |      |      |      |      |       |      |      |      |      |      |      |       | 30.7 | 27.8 | 22.3 | 39.0 | 39.0  | 362.8   | 20.2 |
| Average.....                  |                   |                        | 29.0 | 29.0 | 2.7  | 0    | 0    | 11.1 | 10.7 | 57.7  | 17.9 | 7.6  | 11.7 | 9    | 30.1 | 7.4  | 32.7  | 28.9 | 21.0 | 20.7 | 31.4 | 31.4  | 313.6   | 18.2 |
| OATS                          |                   |                        |      |      |      |      |      |      |      |       |      |      |      |      |      |      |       |      |      |      |      |       |         |      |
| A.....                        | Oats.....         | Spring plowed.....     | 31.9 | 43.8 | 9.2  | 0    | 11.7 | 17.8 | 13.0 | 121.3 | 31.4 | 13.0 | 21.3 | 0    | 61.6 | 5.0  | 44.7  | 29.1 | 20.9 | 18.4 | 40.6 | 40.6  | 513.8   | 28.5 |
| B.....                        | do.....           | Fall plowed.....       | 31.3 | 46.9 | 0    | 0    | 6.6  | 15.8 | 24.7 | 119.7 | 23.1 | 13.3 | 24.4 | 0    | 59.4 | 0    | 62.5  | 56.3 | 42.2 | 39.7 | 54.7 | 54.7  | 589.3   | 32.7 |
| E.....                        | do.....           | Subsoiled.....         | 33.8 | 60.8 | 0    | 0    | 7.3  | 16.3 | 20.3 | 118.1 | 21.1 | 15.2 | 17.5 | 0    | 65.9 | 3.4  | 63.1  | 60.3 | 37.2 | 46.6 | 63.1 | 63.1  | 694.2   | 33.7 |
| F.....                        | do.....           | Fall listed.....       | 47.8 | 56.7 | 7.2  | 0    | 8.6  | 18.8 | 21.4 | 125.3 | 31.7 | 21.7 | 28.9 | 0    | 71.9 | 5.6  | 59.4  | 56.3 | 45.0 | 45.0 | 51.3 | 51.3  | 657.8   | 36.5 |
| Average.....                  |                   |                        | 53.3 | 53.3 | 4.1  | 0    | 8.6  | 17.2 | 19.9 | 121.1 | 27.6 | 15.8 | 23.0 | 0    | 61.7 | 3.5  | 57.4  | 50.5 | 36.3 | 37.4 | 51.4 | 51.4  | 591.8   | 32.9 |
| C or D.....                   | Fallow.....       | Fallow.....            | 45.9 | 76.7 | 17.5 | 0    | 6.6  | 32.7 | 40.6 | 122.5 | 40.8 | 26.1 | 53.8 | 13.1 | 67.2 | 40.9 | 78.1  | 71.9 | 46.9 | 60.0 | 86.3 | 86.3  | 890.7   | 49.5 |
| 1.....                        | Wheat.....        | Fall plowed.....       | 36.3 | 55.6 | 0    | 0    | 6.4  | 15.9 | 13.0 | 125.3 | 14.1 | 13.6 | 16.4 | 0    | 62.8 | 0    | 68.4  | 59.1 | td   |      |      |       |         |      |







## CROP YIELDS AT THE BELLE FOURCHE (S. DAK.) FIELD STATION

TABLE 59.—Annual acre yields of specified crops grown in rotations on individual plots at Belle Fourche, S. Dak. in one or more years from 1908 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
|-------------------------------|---------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|-------|-------------|-------|-------|-------|-------|-------|------|------|------|------|-------|-------|------|------|--------|------|------|-------|-------|------|----|
| CORN GRAIN—CON.               |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 4                             | Wheat         | Fall plowed    | 5.7  | 19.8 | 0    | 0    | 23.4 | 9.3  | 0    | 51.0 | 28.4 | 18.0 | 20.1 | 0    | 38.7 | 0    | 47.4 | 53.2 | 30.3 | 7.4  | 34.0 | 387.0 | 21.6    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 5                             | Oats          | do             | 6.2  | 19.2 | 0    | 0    | 21.3 | 8.9  | 0    | 52.0 | 31.5 | 22.1 | 23.9 | 0    | 38.9 | 0    | 48.6 | 52.2 | 33.0 | 12.4 | 33.6 | 398.3 | 22.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 6                             | Wheat         | Spring plowed  | 3.3  | 20.6 | 0    | 0    | 22.2 | 5.2  | 0    | 50.0 | 34.7 | 20.5 | 25.6 | 0    | 37.9 | 15.8 | 40.6 | 61.0 | 15.4 | 7.3  | 27.3 | 384.1 | 21.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 7                             | Wheat         | do             | 3.3  | 22.7 | 0    | 0    | 22.1 | 7.2  | 0    | 50.1 | 33.3 | 16.7 | 29.7 | 0    | 40.1 | 10.6 | 38.0 | 61.0 | 15.4 | 6.7  | 30.9 | 370.8 | 21.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 8                             | Oats          | do             | 5.1  | 20.8 | 0    | 0    | 17.6 | 10.7 | 0    | 41.3 | 35.6 | 18.3 | 32.5 | 0    | 47.3 | 14.1 | 42.0 | 51.7 | 22.0 | 7.4  | 34.3 | 398.1 | 22.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 9                             | do            | do             | 0.1  | 15.6 | 0    | 0    | 19.4 | 8.9  | 0    | 46.0 | 31.5 | 11.0 | 34.1 | 0    | 47.3 | 10.4 | 46.9 | 56.4 | 12.3 | 4.7  | 31.7 | 377.7 | 21.0    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 10                            | do            | do             | 2.9  | 20.4 | 0    | 0    | 23.4 | 8.4  | 0    | 47.7 | 38.9 | 18.3 | 34.4 | 0    | 34.4 | 9.8  | 41.7 | 57.6 | 25.7 | 8.6  | 32.4 | 401.7 | 22.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 11                            | do            | do             | 2.4  | 17.8 | 0    | 0    | 21.0 | 8.1  | 0    | 35.0 | 30.0 | 19.2 | 31.0 | 0    | 33.9 | 16.9 | 43.7 | 54.6 | 27.1 | 7.6  | 36.0 | 365.8 | 20.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 12                            | Wheat         | do             | 1.4  | 14.4 | 0    | 0    | 17.5 | 11.5 | 0    | 33.3 | 29.0 | 22.1 | 36.2 | 0    | 28.5 | 12.9 | 37.7 | 58.4 | 2.7  | 9.9  | 32.1 | 328.8 | 18.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 13                            | do            | do             | 1.9  | 15.1 | 0    | 0    | 18.6 | 5.1  | 0    | 35.6 | 33.0 | 17.4 | 29.4 | 0    | 43.2 | 12.9 | 40.6 | 57.0 | 3.3  | 0.6  | 32.9 | 320.7 | 18.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 14                            | Wheat         | do             | 1.0  | 14.0 | 0    | 0    | 15.4 | 0.5  | 0    | 31.1 | 31.9 | 29.1 | 32.1 | 0    | 32.7 | 11.0 | 38.0 | 46.8 | 0    | 0    | 41.1 | 361.3 | 20.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 15                            | do            | do             | 3.3  | 20.3 | 0    | 0    | 18.0 | 11.0 | 0    | 36.9 | 30.4 | 23.9 | 34.6 | 0    | 37.6 | 16.3 | 47.4 | 55.7 | 4.6  | 10.7 | 38.3 | 409.7 | 22.6    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 16                            | Oats          | do             | 5.3  | 21.3 | 0    | 0    | 19.0 | 6.1  | 0    | 44.3 | 38.5 | 39.3 | 30.0 | 0    | 38.7 | 10.0 | 43.7 | 40.7 | 17.6 | 9.8  | 35.9 | 406.8 | 22.6    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 17                            | do            | do             | 6.5  | 22.5 | 0    | 0    | 27.5 | 8.6  | 0    | 45.0 | 39.9 | 26.3 | 32.1 | 0    | 31.7 | 5.9  | 39.1 | 53.8 | 15.0 | 5.1  | 38.1 | 350.0 | 20.0    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 18                            | Wheat         | do             | 6.2  | 19.6 | 0    | 0    | 17.0 | 10.4 | 0    | 42.3 | 32.7 | 18.7 | 27.5 | 0    | 38.7 | 7.4  | 34.9 | 51.3 | 22.3 | 3.4  | 28.7 | 393.5 | 19.4    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 19                            | Oats          | do             | 5.7  | 22.2 | 0    | 0    | 20.8 | 6.5  | 0    | 47.1 | 30.1 | 12.7 | 23.4 | 0    | 28.0 | 5.2  | 38.6 | 52.7 | 2.3  | 5.0  | 34.1 | 303.3 | 10.9    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 20                            | do            | do             | 1.0  | 8.5  | 1.3  | 0    | 10.6 | 6.0  | 0    | 40.6 | 29.0 | 13.1 | 27.0 | 0    | 28.0 | 12.1 | 42.3 | 46.8 | 4.1  | 9.7  | 39.9 | 304.6 | 20.3    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 21                            | Wheat         | do             | 4.2  | 17.3 | 0    | 0    | 22.8 | 11.7 | 0    | 40.6 | 29.0 | 13.1 | 32.0 | 0    | 37.0 | 12.1 | 42.3 | 47.3 | 33.3 | 3.4  | 33.7 | 117.7 | 29.4    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 22                            | Wheat         | Fall plowed    | 20.3 | 23.8 | 2.3  | 0    | 1.3  | 10.4 | 0.7  | 71.9 | 26.8 | 10.5 | 10.1 | 0    | 61.1 | 5.9  | 42.5 | 42.2 | 20.5 | 27.7 | 32.0 | 415.7 | 23.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 23                            | Wheat         | Spring plowed  | 20.3 | 23.8 | 2.3  | 0    | 1.3  | 10.4 | 0.7  | 71.9 | 26.8 | 10.5 | 10.1 | 0    | 61.1 | 5.9  | 42.5 | 42.2 | 20.5 | 27.7 | 32.0 | 415.7 | 23.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 24                            | Wheat         | Fall plowed    | 20.3 | 23.8 | 2.3  | 0    | 1.3  | 10.4 | 0.7  | 71.9 | 26.8 | 10.5 | 10.1 | 0    | 61.1 | 5.9  | 42.5 | 42.2 | 20.5 | 27.7 | 32.0 | 415.7 | 23.1    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 18.5    | .06   | 32.1        | 20.1  | 30.0  | 0     | 36.9  | 9.4   | 42.0 | 53.0 | 7.7  | 33.7 | 330.1 | 22.0  |      |      |        |      |      |       |       |      |    |
| BARLEY                        |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| A                             | Barley        | Spring plowed  | 20.3 | 23.8 | 4.4  | 0    | 5.2  | 10.9 | 5.2  | 68.1 | 17.8 | 15.3 | 8.3  | 0    | 60.5 | 17.9 | 47.1 | 26.0 | 15.8 | 21.7 | 30.6 | 390.6 | 21.7    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| B                             | do            | Fall plowed    | 25.2 | 25.0 | 4.8  | 0    | 0    | 8.9  | 7.1  | 71.5 | 33.6 | 23.3 | 11.6 | 0    | 59.8 | 0    | 42.5 | 40.6 | 31.7 | 20.6 | 37.1 | 430.1 | 21.9    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| C                             | do            | Subsoiled      | 21.0 | 33.8 | 0    | 0    | 0    | 7.8  | 6.3  | 78.9 | 29.2 | 19.2 | 9.4  | 0    | 56.3 | 0    | 42.9 | 50.2 | 29.8 | 28.3 | 31.0 | 426.7 | 23.7    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| D                             | do            | Fall listed    | 20.8 | 30.2 | 0    | 0    | 0    | 7.8  | 8.1  | 69.2 | 29.4 | 20.3 | 11.0 | 0    | 61.9 | 5.8  | 37.5 | 43.1 | 28.8 | 31.3 | 28.1 | 300.5 | 22.8    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 28.2    | 2.3   | 19.5        | 19.5  | 10.1  | 0     | 61.1  | 5.9   | 42.5 | 42.2 | 20.5 | 27.7 | 32.0  | 415.7 | 23.1 |      |        |      |      |       |       |      |    |
| C or D                        |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 23.1    | 37.3  | 3.0         | 0     | 0     | 0     | 13.4  | 21.7  | 74.3 | 42.7 | 28.1 | 36.0 | 8.8   | 64.4  | 43.5 | 50.4 | 57.7   | 43.3 | 49.6 | 77.9  | 652.1 | 36.2 |    |
| 6                             | Corn          | Disked         | 31.0 | 43.8 | 5.9  | 0    | 0    | 8.9  | 12.2 | 63.7 | 36.8 | 27.5 | 12.3 | 0    | 62.7 | 6.0  | 51.3 | 50.0 | 36.3 | 31.5 | 50.2 | 509.2 | 27.8    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 7                             | Oats          | Spring plowed  | 31.0 | 28.1 | 3.6  | 0    | 0    | 0.8  | 5.8  | 77.5 | 30.2 | 26.0 | 13.8 | 0    | 54.0 | 16.3 | 41.7 | 50.0 | 12.1 | 31.2 | 50.0 | 400.3 | 23.0    |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 36.0    | 4.3   | 4.3         | 0     | 0     | 0     | 7.9   | 9.0   | 71.6 | 33.5 | 27.1 | 13.1 | 0     | 58.7  | 11.2 | 46.5 | 51.5   | 21.2 | 32.0 | 50.1  | 480.3 | 20.7 |    |
| FLAX                          |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 7.1     | 8.0   | 0           | 0     | 0     | 0     | 0     | 0     | 29.6 | 3.4  | 3.1  | 7.9  | 0     | 22.1  | 0    | 17.1 | 12.0   | 3.0  | 3.0  | 3.0   | 112.2 | 6.2  |    |
| WINTER RYE                    |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 410     | Sorgo | Stubbled in | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   | do |
| 411                           | Winter wheat  | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    | do      |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 412                           | Corn          | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1970    | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| BROMEGRASS                    |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 10      | Wheat | Disked      | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 11                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| 12                            | Brome grass   | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 43                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 43                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 43                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 43                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   | do   | do    | do    | do   | do   | do     | do   | do   | do    | do    | do   |    |
| 43                            | Wheat         | do             | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do   | do    |         |       |             |       |       |       |       |       |      |      |      |      |       |       |      |      |        |      |      |       |       |      |    |
| Average                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,970   | 583   | 1,970       | 1,805 | 1,100 | 1,725 | 1,188 | 1,025 | 508  | 525  | 0    | 0    | 1,425 | 1,175 | 625  | 550  | 15,628 | 803  | 263  | 4,740 | 203   |      |    |
| ALFALFA                       |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       | 42      | Wheat | Fall plowed | do    | do    | do    | do    | do    | do   | do   | do   |      |       |       |      |      |        |      |      |       |       |      |    |



| CLOVER   | (Wheat-<br>Clover) | Fall plowed   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,500 | 0     | 3,000 | 3,700 | 1,100 | 0     | 1,400 | 13,900  | 772   |
|----------|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|
|          |                    |               | 0     | 0     | 0     | 1,480 | 0     | 3,200 | 0     | 3,200 | 0     | 500   | 0     | 3,200 | 2,050 | 4,100 | 2,250 | 19,220  | 1,068 |
| Average  |                    |               | 0     | 100   | 0     | 740   | 370   | 3,250 | 500   | 0     | 750   | 250   | 0     | 3,100 | 1,575 | 2,050 | 1,825 | 16,560  | 920   |
| POTATOES |                    |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |         |       |
| 75       | Wheat              | Spring plowed | 19.0  | 51.3  | 0     | 129.0 | 21.8  | 105.0 | 135.7 | 68.3  | 100.0 | 0     | 63.3  | 81.3  | 238.7 | 111.0 | 110.3 | 1,406.3 | 78.1  |
| 76       | Oats               | do            | 21.3  | 52.6  | 0     | 145.7 | 33.5  | 136.7 | 162.4 | 76.7  | 76.0  | 0     | 58.2  | 91.0  | 211.2 | 102.0 | 127.8 | 1,470.6 | 81.7  |
| Average  |                    |               |       | 52.0  | 54.1  | 0     | 137.4 | 52.4  | 120.9 | 149.1 | 72.5  | 88.0  | 60.8  | 27.1  | 86.2  | 225.0 | 119.1 | 1,438.5 | 79.9  |
| SORGO    |                    |               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |         |       |
| 33       | Oats               | Spring plowed | 2,330 | 4,280 | 2,980 | 2,400 | 1,550 | 6,500 | 9,150 | 1,800 | 6,600 | 0     | 6,000 | 1,200 | 7,200 | 150   | 7,000 | 70,910  | 3,939 |
| 34       | Wheat              | do            | 4,200 | 7,560 | 3,740 | 4,800 | 1,900 | 6,400 | 9,850 | 4,800 | 8,800 | 0     | 5,800 | 3,700 | 6,000 | 850   | 6,000 | 85,600  | 4,756 |
| 409      | Winter wheat       | Fall plowed   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |         |       |
| 410      | Winter rye         | do            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |         |       |
| 411      | do                 | do            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |         |       |
| Average  |                    |               |       | 5,420 | 3,360 | 0     | 4,100 | 1,725 | 6,450 | 9,500 | 3,300 | 7,700 | 0     | 5,900 | 2,450 | 4,640 | 6,530 | 46,432  | 5,522 |

Barley was seeded after corn instead of after oats in 1910.

## CROP YIELDS AT THE ARDMORE (S. DAK.) FIELD STATION

TABLE 60.—Annual acre yields of specified crops grown in rotations on individual plots at Ardmore, S. Dak., in one or more years from 1912 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1913 to 1924, see Figure 20 (p. 32), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, clover, and sorgo are given in pounds; all other yields are stated in bushels. The stated yields under winter wheat for 1912 are of spring wheat. Winter-wheat plots marked with an asterisk (\*) in 1921, 1925, and 1926 were reseeded to spring wheat. All plots of winter wheat, spring wheat, oats, barley, and flax were haled out in 1914 and 1922

| Crop and rotation No. or plot | Previous crop     | Tillage method         | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925  | 1926  | Total | Average |
|-------------------------------|-------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|---------|
| WINTER WHEAT                  |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| A.....                        | Winter wheat..... | Late fall plowed.....  | 5.3  | 0    | 0    | 30.0 | 27.0 | 5.2  | 12.0 | 8.5  | 20.3 | *6.5 | 0    | 12.2 | 3.7  | *6.7  | *2.2  | 118.9 | 10.8    |
| B.....                        | do.....           | Early fall plowed..... | 5.8  | 0    | 0    | 29.2 | 29.8 | 3.3  | 15.3 | 7.3  | 15.7 | *5.2 | 0    | 15.2 | 1.7  | *6.5  | *3.0  | 117.5 | 10.7    |
| E.....                        | do.....           | Subsoiled.....         | 11.5 | 0    | 0    | 33.3 | 34.5 | 7.8  | 13.0 | 8.8  | 20.0 | *4.8 | 0    | 16.0 | .5   | *6.7  | *1.0  | 133.9 | 12.2    |
| F.....                        | do.....           | Fall listed.....       | 7.8  | 0    | 0    | 26.5 | 34.0 | 2.5  | 21.3 | 5.7  | 29.2 | *7.0 | 0    | 17.5 | .7   | *9.8  | *1.7  | 137.4 | 12.5    |
| Average.....                  |                   |                        |      | 0    | 0    | 29.8 | 31.3 | 4.7  | 15.4 | 7.6  | 21.3 | 5.9  | 0    | 15.2 | 1.7  | 7.4   | 2.0   | 126.9 | 11.6    |
| C or D.....                   | Fallow.....       | Fallow.....            | 6.3  | 10.7 | 0    | 36.7 | 33.2 | 8.3  | 25.5 | 33.5 | 27.3 | 30.5 | 0    | 13.3 | 10.5 | *20.0 | *5.5  | 229.5 | 19.1    |
| 85.....                       | do.....           | do.....                |      |      | 0    | 36.7 | 30.5 | 10.8 | 22.5 | 31.3 | 32.3 | 38.3 | 0    | 26.2 | 22.7 | *0    | *3.3  | 251.3 | 22.8    |
| 114.....                      | Corn.....         | Disked.....            | 4.8  | 0    | 0    | 34.8 | 32.7 | 10.0 | 26.0 | 17.7 | 29.2 | 16.3 | 0    | 14.0 | 6.5  | *12.8 | *1.0  | 187.2 | 15.6    |
| 115.....                      | Winter rye.....   | Green manured.....     | 7.0  | 0    | 0    | 30.2 | 33.5 | 9.2  | 17.8 | 19.7 | 28.0 | 30.0 | 0    | 21.2 | 14.8 | *9.8  | *1.7  | 204.4 | 17.0    |
| 116.....                      | Corn.....         | Disked.....            | 5.3  | 0    | 0    | 38.3 | 26.7 | 7.5  | 24.2 | 17.7 | 15.7 | 13.7 | 0    | 16.0 | 4.8  | *10.3 | *1.5  | 164.6 | 13.7    |
| 117.....                      | Peas.....         | Green manured.....     | 4.3  | 0    | 0    | 30.8 | 31.3 | 0    | 11.7 | 15.3 | 24.5 | *7.7 | 0    | 15.3 | 14.3 | *7.8  | *2.0  | 143.2 | 13.0    |
| 118.....                      | Fallow.....       | Fallow.....            | 10.3 | 0    | 0    | 37.5 | 31.0 | 13.3 | 15.7 | 32.7 | 36.0 | 28.5 | 0    | 25.3 | 26.0 | *17.3 | *10.8 | 246.0 | 20.5    |
| 119.....                      | Corn.....         | Disked.....            | 7.0  | 0    | 0    | 35.3 | 30.8 | 8.0  | 27.3 | 24.7 | 30.7 | 17.3 | 0    | 16.2 | 5.3  | *14.8 | *1.0  | 195.6 | 16.3    |
| Average.....                  |                   |                        |      | 0    | 0    | 34.8 | 30.9 | 8.4  | 20.7 | 22.7 | 28.1 | 24.0 | 0    | 19.2 | 13.5 | 10.4  | 3.0   | 198.9 | 17.0    |
| SPRING WHEAT                  |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| A.....                        | Wheat.....        | Spring plowed.....     | 3.3  | 2.3  | 0    | 49.2 | 18.0 | 7.5  | 27.7 | 3.3  | 23.8 | 7.7  | 0    | 16.2 | 6.0  | 7.3   | 5.7   | 174.7 | 12.5    |
| B.....                        | do.....           | Fall plowed.....       | 3.2  | 0    | 0    | 49.5 | 17.5 | 5.5  | 24.2 | 3.0  | 20.0 | 4.7  | 0    | 18.3 | 3.3  | 11.7  | 5.3   | 163.0 | 11.6    |
| E.....                        | do.....           | Subsoiled.....         | 12.5 | 0    | 0    | 43.3 | 12.8 | 6.3  | 24.7 | 2.2  | 22.3 | 6.0  | 0    | 16.8 | 2.5  | 9.0   | 3.8   | 149.7 | 10.7    |
| F.....                        | do.....           | Fall listed.....       | 9.2  | 0    | 0    | 40.0 | 10.3 | 7.2  | 30.0 | 5.0  | 22.5 | 8.0  | 0    | 15.5 | 4.7  | 9.3   | 8.2   | 160.7 | 11.5    |
| Average.....                  |                   |                        |      | .6   | 0    | 45.5 | 14.7 | 6.6  | 26.7 | 3.4  | 22.2 | 6.6  | 0    | 16.7 | 4.1  | 9.3   | 5.8   | 162.0 | 11.6    |
| C or D.....                   | Fallow.....       | Fallow.....            | 6.5  | 7.2  | 0    | 45.0 | 15.8 | 8.7  | 37.0 | 10.3 | 23.7 | 17.7 | 0    | 21.0 | 15.2 | 16.3  | 11.8  | 229.7 | 16.4    |
| 1.....                        | Corn.....         | Disked.....            | 10.2 | 0    | 0    | 49.0 | 27.5 | 9.0  | 37.7 | 12.0 | 31.2 | 21.2 | 0    | 27.0 | 15.5 | 23.2  | 6.3   | 259.6 | 18.5    |
| 2.....                        | do.....           | Spring plowed.....     | 10.5 | 0    | 0    | 48.3 | 24.5 | 9.7  | 39.2 | 17.2 | 30.0 | 17.8 | 0    | 28.3 | 4.3  | 5.2   | 6.0   | 230.5 | 16.5    |
| 3.....                        | do.....           | Fall plowed.....       | 12.0 | 0    | 0    | 45.8 | 25.0 | 9.3  | 37.0 | 8.8  | 32.5 | 12.8 | 0    | 27.8 | 8.8  | 12.7  | 3.8   | 223.7 | 16.0    |
| 4.....                        | Oats.....         | do.....                | 7.5  | 0    | 0    | 38.0 | 25.2 | 7.7  | 30.0 | 19.2 | 30.2 | 19.8 | 0    | 26.8 | 14.8 | 18.3  | 3.7   | 233.7 | 16.7    |
| 5.....                        | Fallow.....       | Fallow.....            | 12.7 | 7.1  | 0    | 46.2 | 20.7 | 9.8  | 40.5 | 17.3 | 29.3 | 21.3 | 0    | 26.4 | 23.2 | 18.3  | 6.8   | 266.9 | 19.1    |
| 8.....                        | Oats.....         | Fall plowed.....       | 10.0 | 0    | 0    | 38.5 | 19.8 | 8.3  | 22.5 | 10.3 | 22.8 | 10.2 | 0    | 21.5 | 6.7  | 15.3  | 3.8   | 179.7 | 12.8    |
| 9.....                        | do.....           | Spring plowed.....     | 6.5  | 2.1  | 0    | 34.7 | 19.8 | 9.3  | 24.2 | 6.7  | 24.0 | 11.7 | 0    | 21.2 | 6.5  | 20.3  | 5.7   | 186.2 | 13.3    |
| 11.....                       | Corn.....         | Disked.....            | 5.8  | 0    | 0    | 44.8 | 25.5 | 9.0  | 41.3 | 7.3  | 32.0 | 16.3 | 0    | 23.5 | 7.3  | 16.3  | 2.7   | 226.0 | 16.1    |
| 12.....                       | do.....           | do.....                | 3.2  | 0    | 0    | 52.6 | 19.0 | 8.3  | 38.7 | 14.7 | 28.5 | 16.3 | 0    | 29.2 | 8.2  | 16.0  | 5.8   | 237.3 | 17.0    |
| 13.....                       | do.....           | do.....                | 4.2  | 0    | 0    | 43.7 | 27.3 | 8.5  | 37.2 | 13.8 | 29.3 | 23.8 | 0    | 27.5 | 11.8 | 22.5  | 8.5   | 253.9 | 18.1    |
| 14.....                       | do.....           | do.....                | 5.7  | 0    | 0    | 52.3 | 23.5 | 8.5  | 41.1 | 13.7 | 34.7 | 27.8 | 0    | 30.8 | 15.0 | 20.0  | 4.5   | 271.9 | 19.4    |
| 15.....                       | Winter rye.....   | Green manured.....     | 7.8  | 0    | 0    | 45.8 | 26.8 | 10.5 | 31.0 | 17.0 | 36.8 | 28.5 | 0    | 28.7 | 18.5 | 15.7  | 10.3  | 269.6 | 19.3    |
| 16.....                       | Corn.....         | Disked.....            | 5.8  | 0    | 0    | 46.7 | 25.5 | 9.7  | 40.3 | 12.7 | 35.5 | 30.3 | 0    | 27.5 | 8.3  | 28.0  | 3.2   | 267.7 | 19.1    |
| 17.....                       | Peas.....         | Green manured.....     | 8.8  | 0    | 0    | 50.8 | 28.0 | 11.5 | 43.8 | 25.3 | 35.0 | 22.3 | 0    | 30.2 | 24.0 | 20.0  | 6.2   | 297.1 | 21.2    |
| 18.....                       | Fallow.....       | Fallow.....            | 10.8 | 4.2  | 0    | 54.3 | 26.2 | 14.2 | 41.2 | 19.7 | 31.8 | 23.2 | 0    | 25.0 | 15.5 | 20.8  | 19.0  | 295.1 | 21.1    |
| 19.....                       | Corn.....         | Disked.....            | 6.0  | 0    | 0    | 57.7 | 27.7 | 7.5  | 41.7 | 11.8 | 37.0 | 23.5 | 0    | 26.3 | 7.5  | 18.3  | 8.5   | 267.5 | 19.1    |
| 31.....                       | do.....           | do.....                | 8.0  | 0    | 0    | 52.7 | 22.0 | 8.6  | 41.1 | 8.2  | 31.7 | 24.2 | 0    | 24.8 | 10.8 | 25.0  | 3.5   | 252.6 | 18.0    |
| 32.....                       | Sweetclover.....  | Green manured.....     | 10.8 | 0    | 0    | 46.8 | 21.8 | 8.3  | 45.5 | 8.3  | 31.0 | 22.5 | 0    | 24.3 | 17.0 | 23.3  | 7.7   | 256.5 | 18.3    |
| 41.....                       | Corn.....         | Disked.....            | 4.7  | 0    | 0    | 52.5 | 23.7 | 9.2  | 28.8 | 8.3  | 34.5 | 13.3 | 0    | 29.2 | 2.3  | 13.2  | 6.0   | 221.0 | 15.8    |
| 42.....                       | do.....           | do.....                | 2.7  | 0    | 0    | 46.2 | 21.5 | 7.5  | 23.3 | 6.3  | 24.0 | 10.7 | 0    | 18.5 | 3.8  | 10.5  | 4.3   | 176.6 | 12.6    |
| 49.....                       | do.....           | do.....                | 5.2  | 0    | 0    | 41.7 | 18.7 | 4.7  | 28.7 | 5.0  | 22.3 | 9.5  | 0    | 15.7 | 9.5  | 15.0  | 11.5  | 182.3 | 13.0    |
| 62.....                       | do.....           | Fall plowed.....       | 9.0  | 0    | 0    | 52.8 | 23.3 | 8.8  | 43.3 | 8.7  | 34.7 | 22.0 | 0    | 23.5 | 11.2 | 16.3  | 3.7   | 248.3 | 17.7    |
| 63.....                       | Winter rye.....   | Green manured.....     | 8.5  | 2.0  | 0    | 30.5 | 28.2 | 9.2  | 42.0 | 20.3 | 32.3 | 22.7 | 0    | 24.5 | 22.7 | 22.8  | 6.0   | 263.2 | 18.8    |
| 71.....                       | Corn.....         | Disked.....            | 10.3 | 2.6  | 0    | 55.3 | 24.0 | 10.0 | 28.0 | 5.8  | 29.8 | 13.3 | 0    | 20.3 | 4.0  | 13.8  | 7.8   | 214.7 | 15.3    |
| 72.....                       | Fallow.....       | Fallow.....            | 5.2  | 7.8  | 0    | 54.7 | 20.8 | 9.2  | 44.8 | 20.8 | 30.0 | 20.7 | 0    | 30.3 | 23.0 | 14.2  | 10.0  | 256.3 | 20.5    |
| 75.....                       | do.....           | do.....                | 8.7  | 10.2 | 0    | 53.0 | 27.0 | 12.7 | 41.8 | 20.0 | 36.3 | 33.3 | 0    | 26.5 | 18.7 | 19.2  | 9.5   | 308.2 | 22.0    |
| 76.....                       | Potatoes.....     | Disked.....            | 4.7  | 0    | 0    | 45.0 | 23.2 | 10.0 | 40.8 | 19.2 | 28.8 | 23.2 | 0    | 29.8 | 14.0 | 20.2  | 9.2   | 263.4 | 18.8    |
| 86.....                       | Corn.....         | do.....                |      |      | 0    | 32.5 | 15.5 | 10.0 | 24.8 | 7.8  | 22.0 | 18.2 | 0    | 23.5 | 8.5  | 20.3  | 11.2  | 194.3 | 14.9    |
| 247a.....                     | Flax.....         | Spring plowed.....     |      |      | 0    | 28.7 | 11.5 | 5.8  | 24.2 | 4.5  | 14.2 | 9.8  | 0    | 16.5 | 4.3  | 11.0  | 4.5   | 135.0 | 10.4    |
| 247b.....                     | do.....           | do.....                |      |      | 0    | 22.2 |      |      |      | 3.3  | 18.3 | 7.3  | 0    | 17.0 | 4.0  | 7.7   | 5.8   | 85.6  | 9.5     |
| Average.....                  |                   |                        |      | 1.3  | 0    | 46.3 | 23.2 | 9.1  | 36.0 | 12.5 | 29.7 | 19.3 | 0    | 25.1 | 11.7 | 17.4  | 6.9   | 235.2 | 17.0    |
| H or I.....                   | Fallow.....       | Fallow.....            | 6.2  | 4.5  | 0    | 47.2 | 11.3 | 8.8  | 31.3 | 8.0  | 20.7 | 23.2 | 0    | 26.2 | 19.2 | 21.5  | 10.7  | 232.6 | 16.6    |
| J or K.....                   | do.....           | do.....                | 7.7  | 8.3  | 0    | 51.3 | 13.7 | 10.2 | 34.2 | 15.7 | 21.2 | 23.2 | 0    | 27.8 | 18.0 | 21.0  | 4.7   | 252.3 | 18.0    |
| L or M.....                   | do.....           | do.....                | 4.5  | 7.5  | 0    | 49.2 | 15.8 | 9.0  | 35.8 | 15.5 | 22.7 | 23.5 | 0    | 29.8 | 19.2 | 27.7  | 9.5   | 260.2 | 18.6    |
| N or O.....                   | do.....           | do.....                | 7.7  | 7.8  | 0    | 51.7 | 12.8 | 8.8  | 34.2 | 12.0 | 23.0 | 23.0 | 0    | 25.0 | 17.8 | 20.8  | 11.0  | 247.9 | 17.7    |
| Average.....                  |                   |                        |      | 7.0  | 0    | 50.6 | 13.4 | 9.2  | 33.9 | 12.8 | 21.9 | 23.2 | 0    | 27.2 | 18.6 | 21.5  | 9.0   | 248.3 | 17.7    |
| 570.....                      | Fallow.....       | Fallow.....            |      |      | 0    | 50.2 | 12.5 | 5.8  | 29.7 | 7.0  | 24.2 | 19.0 | 0    | 18.5 | 12.8 | 12.5  | 10.0  | 262.2 | 16.9    |
| OATS                          |                   |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| A.....                        | Oats.....         | Spring plowed.....     | 8.8  | 0    | 0    | 75.3 | 32.5 | 15.0 | 53.1 | 14.1 | 51.6 | 17.1 | 0    | 39.7 | 13.8 | 21.9  | 19.7  | 353.8 | 25.3    |
| B.....                        | do.....           | Fall plowed.....       | 8.1  | 0    | 0    | 75.3 | 42.2 | 14.4 | 62.5 | 12.8 | 56.9 | 13.1 | 0    | 42.2 | 4.4  | 24.4  | 13.4  | 361.6 | 25.8    |
| E.....                        | do.....           | Subsoiled.....         | 15.9 | 0    | 0    | 59.4 | 25.0 | 15.0 | 62.5 | 10.3 | 56.9 | 18.1 | 0    | 37.2 | 3.1  | 16.6  | 9.1   | 313.2 | 22.4    |
| F.....                        | do.....           | Fall listed.....       | 16.3 | 0    | 0    | 56.6 | 18.1 | 11.3 | 61.3 | 13.4 | 57.8 | 13.4 | 0    | 36.6 | 9.1  | 20.9  | 16.3  | 333.8 | 23.8    |
| Average.....                  |                   |                        |      | 0    | 0    | 71.4 | 29.5 | 13.9 | 59.9 | 12.7 | 55.8 | 15.4 | 0    | 38.9 | 7.6  | 21.0  | 514.6 | 340.6 | 24.3    |
| C or D.....                   | Fallow.....       | Fallow.....            | 14.1 | 14.6 | 0    | 85.6 | 32.5 | 18.8 | 94.4 | 39.1 | 64.4 | 35.3 | 0    | 68.8 | 0    | 35.6  | 28.1  | 14.2  | 36.7    |
| 1.....                        | Wheat.....        | Fall plowed.....       | 11.3 | 0    | 0    | 85.0 | 38.4 | 1    |      |      |      |      |      |      |      |       |       |       |         |



## CROP YIELDS AT THE ARDMORE (S. DAK.) FIELD STATION—Continued

TABLE 60.—Annual acre yields of specified crops grown in rotations on individual plots at Ardmore, S. Dak., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926   | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|---------|
| OATS—con.                     |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| 16                            | Peas          | Green manured  | 18.8  | 0     | 0     | 87.5  | 39.4  | 22.8  | 81.6  | 32.5  | 65.6  | 65.3  | 0     | 69.7  | 0     | 35.6  | 26.6   | 526.6  | 37.6    |
| 17                            | Corn          | Disked         | 19.1  | 0     | 0     | 85.9  | 54.4  | 15.9  | 84.4  | 34.7  | 69.1  | 61.3  | 0     | 56.9  | 19.1  | 51.9  | 23.4   | 557.0  | 39.8    |
| 18                            | do            | do             | 11.6  | 0     | 0     | 89.1  | 50.9  | 17.2  | 70.0  | 37.8  | 53.8  | 32.2  | 0     | 60.9  | 12.8  | 34.1  | 20.3   | 479.1  | 34.2    |
| 19                            | Fallow        | Fallowed       | 15.0  | 4.2   | 0     | 92.2  | 46.9  | 24.7  | 84.7  | 42.5  | 71.6  | 77.5  | 0     | 75.3  | 31.9  | 43.1  | 33.8   | 633.4  | 45.2    |
| 31                            | Sweetclover   | Green manured  | 18.4  | 0     | 0     | 89.1  | 37.5  | 18.8  | 81.3  | 23.1  | 74.4  | 73.8  | 0     | 82.2  | 16.6  | 44.4  | 42.5   | 583.7  | 41.7    |
| 32                            | Corn          | Disked         | 18.1  | 0     | 0     | 92.5  | 52.8  | 18.1  | 67.2  | 21.3  | 57.5  | 50.9  | 0     | 63.8  | 14.4  | 55.9  | 23.4   | 517.8  | 37.0    |
| 40                            | do            | do             | 14.7  | 0     | 0     | 59.7  | 25.9  | 10.0  | 53.8  | 14.1  | 47.2  | 28.1  | 0     | 44.4  | 10.3  | 30.6  | 13.4   | 337.5  | 24.1    |
| 41                            | Bromegrass    | Fall plowed    | 8.8   | 0     | 0     | 74.1  | 32.2  | 12.5  | 48.1  | 6.3   | 44.4  | 40.3  | 0     | 38.1  | 3.4   | 24.1  | 13.8   | 337.3  | 24.1    |
| 42                            | Alfalfa       | do             | 6.3   | 0     | 0     | 78.4  | 23.4  | 11.3  | 48.4  | 10.6  | 49.7  | 13.1  | 0     | 40.0  | 10.6  | 19.1  | 4.7    | 309.3  | 22.1    |
| 62                            | Wheat         | Spring plowed  | 10.6  | 0     | 0     | 70.3  | 36.9  | 13.4  | 67.5  | 40.9  | 70.3  | 51.3  | 0     | 70.0  | 24.7  | 33.1  | 30.3   | 508.7  | 36.3    |
| 63                            | do            | do             | 14.7  | 0     | 0     | 59.4  | 38.1  | 21.9  | 73.1  | 13.8  | 53.4  | 45.3  | 0     | 59.1  | 10.9  | 34.7  | 35.3   | 445.0  | 31.8    |
| 71                            | Fallow        | Fallowed       | 11.9  | 13.8  | 0     | 87.5  | 30.9  | 17.2  | 76.3  | 41.3  | 58.1  | 44.7  | 0     | 70.6  | 20.3  | 34.4  | 31.6   | 526.7  | 37.6    |
| 72                            | Corn          | Disked         | 15.3  | 5.0   | 0     | 90.9  | 77.8  | 20.3  | 71.3  | 24.7  | 57.5  | 59.4  | 0     | 43.4  | 9.1   | 37.5  | 33.4   | 530.3  | 37.9    |
| 75                            | Potatoes      | do             | 8.8   | 0     | 0     | 106.6 | 36.3  | 13.8  | 74.7  | 44.4  | 60.0  | 70.9  | 0     | 80.9  | 18.8  | 47.8  | 39.1   | 593.3  | 42.4    |
| 76                            | Fallow        | Fallowed       | 18.4  | 18.1  | 0     | 101.6 | 53.8  | 21.6  | 89.1  | 41.9  | 78.1  | 81.3  | 0     | 78.1  | 18.1  | 70.0  | 35.6   | 687.3  | 49.1    |
| 114                           | Winter rye    | Green manured  | 19.4  | 0     | 0     | 46.3  | 33.8  | 15.0  | 66.9  | 18.4  | 57.2  | 36.6  | 0     | 53.4  | 20.9  | 26.3  | 27.2   | 402.0  | 28.7    |
| 115                           | Corn          | Disked         | 20.0  | 0     | 0     | 75.9  | 34.4  | 11.9  | 45.3  | 20.6  | 37.2  | 38.1  | 0     | 54.1  | 12.5  | 35.6  | 24.1   | 389.7  | 27.8    |
| 116                           | Peas          | Green manured  | 17.2  | 0     | 0     | 61.3  | 34.4  | 11.3  | 48.1  | 15.3  | 42.5  | 37.8  | 0     | 41.3  | 13.1  | 33.4  | 18.8   | 357.3  | 25.5    |
| 117                           | Corn          | Disked         | 14.4  | 0     | 0     | 56.3  | 33.4  | 13.1  | 58.1  | 12.8  | 35.6  | 39.7  | 0     | 42.8  | 11.9  | 34.1  | 22.8   | 360.6  | 25.8    |
| 118                           | do            | do             | 20.9  | 0     | 0     | 65.6  | 33.4  | 22.5  | 69.4  | 16.9  | 49.1  | 36.9  | 0     | 57.8  | 11.6  | 37.5  | 23.8   | 424.5  | 30.3    |
| 119                           | Fallow        | Fallowed       | 23.4  | 6.7   | 0     | 56.3  | 34.7  | 18.1  | 61.3  | 21.2  | 71.3  | 65.3  | 0     | 63.1  | 28.8  | 42.5  | 33.1   | 502.4  | 35.9    |
| 248a                          | Flax          | Spring plowed  |       |       | 0     | 48.4  | 30.3  | 6.9   | 36.6  | 16.3  | 40.6  | 18.8  | 0     | 28.1  | 10.0  | 16.9  | 14.1   | 267.0  | 20.5    |
| 248b                          | do            | do             |       |       |       |       | 24.1  |       |       | 11.9  | 34.4  | 24.1  | 0     | 11.6  | 8.1   | 22.2  | 15.3   | 151.7  | 19.0    |
| Average                       |               |                |       | 2.3   | 0     | 77.2  | 40.7  | 15.2  | 64.8  | 22.6  | 56.1  | 45.2  | 0     | 59.7  | 14.1  | 34.6  | 25.5   | 453.6  | 32.7    |
| CORN TOTAL                    |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
| A                             | Corn          | Spring plowed  | 2,200 | 770   | 790   | 5,450 | 5,360 | 2,740 | 3,870 | 2,120 | 2,650 | 3,380 | 1,710 | 4,610 | 1,260 | 3,260 | 2,040  | 39,890 | 2,849   |
| B                             | do            | Fall plowed    | 2,700 | 680   | 680   | 6,710 | 4,360 | 3,390 | 4,050 | 2,400 | 3,710 | 2,500 | 2,070 | 4,890 | 2,350 | 2,650 | 2,240  | 42,720 | 3,051   |
| E                             | do            | Subsoiled      | 3,000 | 700   | 700   | 5,200 | 5,560 | 2,580 | 3,200 | 1,590 | 2,880 | 2,800 | 2,330 | 4,850 | 1,306 | 2,800 | 2,820  | 39,400 | 2,814   |
| F                             | do            | Spring listed  | 3,900 | 930   | 825   | 6,010 | 4,650 | 1,660 | 3,200 | 1,670 | 3,616 | 3,340 | 2,250 | 4,460 | 1,450 | 2,650 | 1,380  | 38,085 | 2,720   |
| G                             | do            | do             | 3,800 | 1,350 | 815   | 6,040 | 3,940 | 1,590 | 2,900 | 1,200 | 2,820 | 3,290 | 2,250 | 3,780 | 1,250 | 2,460 | 1,470  | 35,245 | 2,518   |
| Average                       |               |                |       | 886   | 762   | 5,882 | 4,774 | 2,392 | 3,488 | 1,796 | 3,134 | 3,062 | 2,122 | 4,518 | 1,510 | 2,752 | 1,990  | 39,068 | 3,488   |
| C or D                        |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |         |
|                               | Fallow        | Fallowed       | 2,600 | 1,780 | 800   | 7,040 | 4,660 | 2,560 | 4,070 | 4,240 | 3,930 | 3,350 | 3,110 | 4,670 | 3,450 | 4,450 | 2,920  | 51,030 | 3,645   |
| 1                             | Oats          | Fall plowed    | 3,300 | 520   | 870   | 7,100 | 4,970 | 2,600 | 3,540 | 1,550 | 3,960 | 2,440 | 2,480 | 6,840 | 1,650 | 2,400 | 3,350  | 44,270 | 3,162   |
| 2                             | do            | Spring plowed  | 4,270 | 925   | 1,130 | 7,050 | 5,100 | 2,090 | 3,030 | 2,910 | 3,046 | 2,930 | 4,700 | 2,700 | 2,700 | 2,430 | 43,355 | 3,097  |         |
| 3                             | do            | Fall plowed    | 2,700 | 455   | 850   | 6,400 | 4,980 | 2,460 | 3,580 | 1,720 | 3,460 | 2,650 | 1,580 | 5,240 | 1,150 | 3,050 | 2,780  | 40,355 | 2,883   |
| 4                             | Wheat         | do             | 4,390 | 550   | 935   | 6,710 | 4,640 | 2,090 | 3,960 | 2,510 | 3,290 | 3,550 | 2,840 | 4,550 | 3,300 | 2,950 | 2,400  | 44,275 | 3,163   |
| 6                             | Oats          | do             | 3,490 | 530   | 1,130 | 8,350 | 4,840 | 2,553 | 3,940 | 2,410 | 3,730 | 2,660 | 2,730 | 4,710 | 3,200 | 2,700 | 2,770  | 46,250 | 3,304   |
| 7                             | Barley        | Spring plowed  | 4,500 | 515   | 1,105 | 6,730 | 4,750 | 2,930 | 3,550 | 2,456 | 3,350 | 2,940 | 2,610 | 3,980 | 1,650 | 2,950 | 2,660  | 42,170 | 3,012   |
| 9                             | Wheat         | do             | 3,200 | 850   | 1,240 | 5,460 | 4,400 | 3,220 | 2,700 | 2,340 | 1,890 | 2,070 | 2,800 | 5,070 | 2,040 | 3,000 | 3,140  | 40,280 | 2,877   |
| 11                            | Oats          | do             | 2,000 | 1,020 | 735   | 5,980 | 5,190 | 1,790 | 3,170 | 1,820 | 3,090 | 2,030 | 2,420 | 4,350 | 1,660 | 2,600 | 2,460  | 38,255 | 2,733   |
| 12                            | do            | do             | 3,600 | 1,140 | 920   | 6,300 | 4,230 | 2,700 | 2,790 | 2,300 | 3,520 | 2,580 | 2,780 | 4,820 | 2,100 | 2,500 | 2,660  | 41,340 | 2,953   |
| 13                            | do            | do             | 2,700 | 845   | 1,055 | 6,120 | 4,680 | 1,920 | 4,140 | 2,040 | 2,756 | 2,890 | 2,236 | 4,350 | 3,300 | 3,250 | 2,270  | 41,840 | 2,989   |
| 14                            | do            | do             | 2,900 | 1,335 | 1,015 | 6,840 | 4,180 | 1,580 | 4,120 | 2,110 | 2,730 | 2,280 | 2,690 | 4,800 | 2,900 | 2,650 | 3,180  | 43,410 | 3,101   |
| 15                            | Wheat         | do             | 3,000 | 860   | 895   | 7,800 | 5,280 | 2,350 | 4,290 | 2,480 | 3,700 | 2,580 | 2,590 | 4,430 | 2,750 | 3,050 | 3,230  | 46,285 | 3,306   |
| 16                            | Oats          | do             | 3,400 | 1,266 | 1,075 | 6,410 | 4,560 | 2,840 | 3,780 | 2,310 | 2,930 | 3,240 | 2,120 | 4,960 | 2,300 | 2,850 | 3,290  | 43,925 | 3,138   |
| 17                            | Wheat         | do             | 2,900 | 1,100 | 1,185 | 8,100 | 5,140 | 2,630 | 4,700 | 1,770 | 3,930 | 3,060 | 3,510 | 5,700 | 1,650 | 3,200 | 4,300  | 50,095 | 3,578   |
| 18                            | do            | do             | 3,000 | 750   | 980   | 7,400 | 5,730 | 3,100 | 4,330 | 2,110 | 4,850 | 2,520 | 2,060 | 5,640 | 2,500 | 2,750 | 3,280  | 48,000 | 3,429   |
| 19                            | Oats          | do             | 2,400 | 1,190 | 830   | 7,100 | 4,180 | 2,340 | 3,920 | 2,280 | 3,480 | 2,960 | 2,020 | 4,640 | 1,300 | 3,250 | 3,600  | 43,100 | 3,079   |
| 31                            | do            | do             | 3,360 | 1,225 | 1,030 | 8,400 | 4,780 | 2,370 | 3,970 | 2,840 | 2,680 | 3,400 | 2,240 | 4,280 | 2,100 | 2,200 | 3,220  | 44,735 | 3,195   |
| 32                            | Wheat         | do             | 3,300 | 910   | 985   | 8,400 | 4,980 | 2,830 | 4,810 | 2,680 | 2,920 | 2,400 | 3,370 | 4,730 | 3,300 | 2,850 | 3,090  | 48,255 | 3,447   |
| 40                            | Oats          | Fall plowed    | 3,000 | 450   | 785   | 6,310 | 4,220 | 2,030 | 3,100 | 2,350 | 3,250 | 1,570 | 2,020 | 4,190 | 750   | 2,780 | 2,580  | 36,365 | 2,598   |
| 41                            | do            | Spring plowed  | 2,500 | 950   | 880   | 7,200 | 4,100 | 2,560 | 3,680 | 1,990 | 3,540 | 2,150 | 2,380 | 5,300 | 1,600 | 1,900 | 2,110  | 40,440 | 2,889   |
| 42                            | do            | do             | 2,100 | 910   | 985   | 6,950 | 5,200 | 2,020 | 3,330 | 2,700 | 3,400 | 2,460 | 2,970 | 5,500 | 1,700 | 2,600 | 2,120  | 42,895 | 3,064   |
| 49                            | Wheat         | Fall plowed    | 2,600 | 310   | 850   | 6,900 | 4,830 | 2,440 | 3,840 | 1,200 | 3,750 | 1,840 | 3,050 | 4,700 | 1,150 | 2,660 | 2,560  | 39,070 | 2,791   |
| 62                            | Oats          | Spring plowed  | 2,700 | 1,010 | 1,969 | 3,900 | 4,450 | 2,050 | 3,660 | 1,700 | 1,590 | 3,310 | 2,410 | 4,530 | 2,150 | 2,850 | 2,480  | 37,089 | 2,649   |
| 71                            | do            | do             | 4,000 | 1,440 | 1,190 | 7,250 | 4,950 | 2,820 | 3,050 | 2,480 | 3,540 | 2,290 | 2,960 | 5,080 | 2,000 | 2,460 | 4,380  | 43,980 | 3,141   |
| 72                            | Wheat         | do             | 4,300 | 1,110 | 1,100 | 7,500 | 4,910 | 2,580 | 3,150 | 2,280 | 4,000 | 2,390 | 2,920 | 4,420 | 2,450 | 3,320 | 4,450  | 48,380 | 3,249   |
| 85                            | Winter wheat  | Fall plowed    | 1,150 | 5,200 | 4,170 | 3,500 | 3,900 | 1,960 | 3,010 | 2,250 | 2,030 | 4,340 | 3,300 | 4,500 | 4,500 | 1,690 | 40,760 | 3,135  |         |



## CROP YIELDS AT THE ARDMORE (S. DAK.) FIELD STATION—Continued

TABLE 60.—Annual acre yields of specified crops grown in rotations on individual plots at Ardmore, S. Dak., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|---------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| CORN GRAIN—continued          |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 7                             | Barley        | Spring plowed  | 34.9 | 0    | 0    | 46.1 | 26.4 | 16.1 | 23.6 | 12.1 | 20.0 | 12.5 | 19.3 | 26.9 | 0    | 12.0 | 13.3 | 228.3 | 16.3    |
| 9                             | Wheat         | do             | 25.7 | 0    | 0    | 39.4 | 22.9 | 18.9 | 16.4 | 12.0 | 10.5 | 10.3 | 17.3 | 32.4 | 0    | 14.9 | 13.6 | 208.6 | 14.9    |
| 11                            | Oats          | do             | 10.7 | 0    | 0    | 39.0 | 22.7 | 14.9 | 20.3 | 7.4  | 16.5 | 3.1  | 14.3 | 27.1 | 0    | 6.0  | 9.6  | 180.9 | 12.9    |
| 12                            | do            | do             | 24.9 | 0    | 0    | 37.4 | 20.4 | 12.9 | 19.1 | 8.6  | 21.6 | 3.7  | 15.4 | 31.7 | 0    | 6.9  | 6.7  | 184.4 | 13.2    |
| 13                            | do            | do             | 17.4 | 0    | 0    | 40.3 | 19.7 | 13.9 | 24.9 | 14.9 | 22.0 | 13.2 | 16.1 | 26.4 | 0    | 7.9  | 13.9 | 213.2 | 15.2    |
| 14                            | do            | do             | 20.7 | 0    | 0    | 39.9 | 19.0 | 10.4 | 23.1 | 8.0  | 15.1 | 14.4 | 14.9 | 27.1 | 7.3  | 11.6 | 19.6 | 210.4 | 15.0    |
| 15                            | Wheat         | do             | 18.1 | 0    | 0    | 43.7 | 25.9 | 15.7 | 26.3 | 14.7 | 22.7 | 7.7  | 16.3 | 32.6 | 5.6  | 10.3 | 21.4 | 243.9 | 17.4    |
| 16                            | Oats          | do             | 21.3 | 0    | 0    | 43.0 | 22.3 | 14.1 | 22.6 | 8.0  | 15.1 | 12.5 | 13.9 | 25.1 | 4.6  | 9.9  | 15.1 | 206.2 | 14.7    |
| 17                            | Wheat         | do             | 23.0 | 0    | 0    | 43.4 | 24.9 | 19.0 | 23.6 | 11.7 | 27.1 | 11.5 | 19.4 | 30.9 | 1.7  | 9.5  | 24.6 | 247.3 | 17.7    |
| 18                            | do            | do             | 17.9 | 0    | 0    | 47.7 | 24.7 | 19.3 | 31.9 | 13.7 | 30.0 | 5.6  | 11.6 | 32.7 | 6.9  | 10.0 | 18.9 | 253.0 | 18.1    |
| 19                            | Oats          | do             | 19.7 | 0    | 0    | 41.6 | 21.9 | 17.7 | 24.6 | 13.3 | 20.5 | 16.0 | 12.4 | 29.1 | 2.1  | 8.5  | 14.0 | 221.7 | 15.8    |
| 31                            | do            | do             | 18.4 | 0    | 0    | 42.0 | 21.9 | 11.7 | 21.0 | 10.6 | 15.8 | 14.7 | 12.0 | 25.4 | 3.0  | 13.1 | 14.0 | 205.2 | 14.7    |
| 32                            | Wheat         | do             | 25.9 | 0    | 0    | 40.9 | 24.0 | 15.4 | 31.6 | 12.6 | 17.6 | 2.7  | 20.3 | 30.4 | 8.1  | 9.7  | 21.0 | 234.3 | 16.7    |
| 40                            | Oats          | Fall plowed    | 21.9 | 0    | 0    | 38.7 | 16.4 | 9.7  | 19.3 | 2.1  | 19.3 | 7    | 10.3 | 29.9 | 0    | 8.1  | 5.3  | 159.8 | 11.4    |
| 41                            | do            | Spring plowed  | 11.7 | 0    | 0    | 42.1 | 21.4 | 10.1 | 23.3 | 8.4  | 22.5 | 2.0  | 15.4 | 32.9 | 0    | 5.2  | 6.7  | 190.0 | 13.6    |
| 42                            | do            | do             | 12.9 | 0    | 0    | 42.7 | 20.1 | 8.1  | 21.2 | 7.1  | 20.0 | 6.1  | 18.1 | 27.1 | 0    | 5.5  | 2.9  | 178.9 | 12.8    |
| 49                            | Wheat         | Fall plowed    | 14.3 | 0    | 0    | 37.9 | 21.1 | 14.9 | 20.6 | 3.6  | 22.7 | 3.2  | 12.9 | 24.3 | 0    | 10.1 | 4.4  | 175.7 | 12.6    |
| 62                            | Oats          | Spring plowed  | 20.3 | 0    | 0    | 40.0 | 13.6 | 10.4 | 18.7 | 6.4  | 7.9  | 5.5  | 14.4 | 31.9 | 0    | 9.9  | 12.1 | 166.8 | 11.9    |
| 71                            | do            | do             | 26.1 | 0    | 0    | 38.6 | 17.7 | 15.3 | 20.7 | 10.4 | 23.9 | 4.4  | 15.9 | 27.6 | 2.0  | 9.9  | 5.3  | 191.7 | 13.7    |
| 72                            | Wheat         | do             | 36.3 | 0    | 0    | 38.6 | 23.0 | 14.7 | 17.9 | 7.6  | 25.3 | 4.1  | 18.1 | 30.3 | 1.6  | 14.7 | 11.6 | 207.5 | 14.8    |
| 85                            | Winter wheat  | Fall plowed    |      |      |      | 30.9 | 18.9 | 15.7 | 20.0 | 8.0  | 17.5 | 4.9  | 10.4 | 32.0 | 5.5  | 21.1 | 5.0  | 189.9 | 14.6    |
| 86                            | Wheat         | do             |      |      |      | 33.9 | 17.6 | 10.7 | 25.9 | 11.0 | 16.7 | 7.3  | 11.1 | 26.9 | 0    | 12.4 | 6.4  | 179.9 | 13.8    |
| 114                           | Barley        | Spring plowed  |      |      |      | 31.7 | 21.1 | 13.6 | 22.0 | 9.7  | 13.3 | 5.7  | 12.7 | 30.4 | 5.6  | 23.0 | 18.3 | 212.1 | 16.3    |
| 115                           | Oats          | do             | 20.3 | 0    | 0    | 29.7 | 16.7 | 11.3 | 22.4 | 9.7  | 13.3 | 4.0  | 15.1 | 23.1 | 3.0  | 15.5 | 4.7  | 168.5 | 12.0    |
| 116                           | Winter wheat  | do             | 25.7 | 0    | 0    | 38.4 | 22.4 | 14.7 | 21.9 | 5.7  | 20.4 | 3.3  | 18.3 | 25.1 | 2.4  | 15.6 | 13.3 | 201.5 | 14.4    |
| 117                           | Oats          | do             | 19.9 | 0    | 0    | 25.7 | 13.7 | 13.0 | 24.7 | 6.4  | 9.3  | 8.9  | 17.6 | 20.4 | 0    | 12.5 | 11.4 | 163.6 | 11.7    |
| 118                           | Winter wheat  | do             | 17.4 | 0    | 0    | 41.0 | 23.0 | 15.0 | 16.0 | 6.1  | 21.9 | 4.0  | 16.3 | 25.7 | 6.1  | 14.4 | 8.7  | 198.2 | 14.2    |
| 119                           | do            | do             | 17.0 | 0    | 0    | 37.0 | 19.4 | 7.0  | 21.4 | 3.0  | 14.4 | 6.3  | 14.7 | 29.7 | 1.9  | 19.5 | 16.1 | 190.4 | 13.6    |
| 243                           | Oats          | do             | 21.0 | 0    | 0    | 26.4 | 23.7 | 13.3 | 24.0 | 12.3 | 15.8 | 12.5 | 15.4 | 30.7 | 1.6  | 11.3 | 11.6 | 198.6 | 14.2    |
| 244                           | Flax          | do             |      |      | 0    | 34.1 | 16.9 | 9.3  | 22.9 | 9.3  | 13.1 | 7.1  | 12.9 | 24.9 | 0    | 18.9 | 15.0 | 162.4 | 12.5    |
| 244a                          | do            | Fall plowed    |      |      | 0    | 37.0 | 21.1 | 8.1  | 24.6 | 9.6  | 18.3 | 6.0  | 13.7 | 30.6 | 3.6  | 14.1 | 7.3  | 194.0 | 14.9    |
| 244b                          | do            | do             |      |      |      | 31.4 |      |      |      | 9.6  | 20.9 | 3.6  | 13.3 | 32.7 | 3.9  | 14.0 | 14.7 | 144.1 | 16.0    |
| 245a                          | do            | Spring plowed  |      |      | 0    | 36.4 | 23.6 | 8.3  | 24.6 | 11.0 | 20.3 | 4.0  | 10.0 | 31.9 | 0    | 13.3 | 15.3 | 198.7 | 15.3    |
| 245b                          | do            | do             |      |      |      | 18.3 |      |      |      | 9.7  | 18.9 | 1.3  | 10.0 | 39.6 | 0    | 14.7 | 18.1 | 124.6 | 13.8    |
| 246a                          | do            | do             |      |      | 0    | 24.6 | 22.6 | 13.3 | 22.1 | 6.1  | 9.3  | 3.8  | 4.0  | 29.6 | 0    | 23.5 | 17.7 | 176.6 | 13.6    |
| 246b                          | do            | do             |      |      |      | 24.4 |      |      |      | 5.7  | 13.5 | 5.2  | 12.4 | 35.6 | 0    | 10.1 | 9.7  | 116.6 | 13.0    |
| Average                       |               |                |      | 0    | 0    | 38.6 | 21.6 | 13.3 | 22.1 | 9.0  | 18.6 | 6.9  | 14.7 | 29.5 | 2.2  | 12.4 | 12.0 | 195.6 | 14.5    |
| BARLEY                        |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Barley        | Spring plowed  | 1.7  | 0    | 0    | 55.4 | 20.4 | 3.8  | 27.5 | 5.4  | 30.8 | 7.1  | 0    | 37.5 | 9.4  | 17.1 | 15.6 | 230.0 | 16.4    |
| B                             | do            | Fall plowed    | 1.9  | 0    | 0    | 54.0 | 25.2 | 5.0  | 32.5 | 5.4  | 30.0 | 7.7  | 0    | 35.2 | 6.7  | 33.1 | 15.2 | 250.0 | 17.9    |
| E                             | do            | Subsoiled      | 4.2  | 0    | 0    | 51.0 | 24.8 | 5.6  | 29.2 | 5.6  | 35.8 | 7.3  | 0    | 52.9 | 4.8  | 25.8 | 5.2  | 248.0 | 17.7    |
| F                             | do            | Fall listed    | 4.4  | 0    | 0    | 64.8 | 23.5 | 5.4  | 48.1 | 8.3  | 39.0 | 10.4 | 0    | 41.9 | 8.8  | 23.8 | 21.9 | 295.9 | 21.1    |
| Average                       |               |                |      | 0    | 0    | 56.3 | 23.5 | 5.0  | 34.3 | 6.2  | 33.9 | 8.1  | 0    | 41.9 | 7.4  | 23.0 | 14.5 | 256.0 | 18.3    |
| C or D                        |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | Fallow        | Fallow         | 1.9  | 10.0 | 0    | 68.0 | 11.3 | 7.3  | 38.3 | 19.0 | 37.9 | 30.2 | 0    | 56.3 | 22.5 | 57.5 | 32.5 | 390.8 | 27.9    |
| 6                             | Corn          | Disked         | 11.0 | 0    | 0    | 49.0 | 25.4 | 5.6  | 60.6 | 7.7  | 52.1 | 20.6 | 0    | 55.0 | 16.3 | 42.5 | 27.1 | 361.9 | 25.9    |
| 7                             | Oats          | Spring plowed  | 10.6 | 0    | 0    | 51.7 | 30.4 | 6.3  | 33.8 | 10.0 | 46.7 | 19.0 | 0    | 47.1 | 6.7  | 29.2 | 16.9 | 297.8 | 21.3    |
| 85                            | Flax          | Disked         |      |      | 0    | 41.9 | 24.6 | 5.2  | 51.5 | 7.3  | 33.1 | 12.5 | 0    | 37.9 | 16.3 | 28.1 | 15.6 | 274.0 | 21.1    |
| 86                            | do            | do             |      |      | 0    | 40.6 | 26.3 | 4.8  | 36.5 | 8.5  | 38.1 | 14.6 | 0    | 27.7 | 9.2  | 33.8 | 17.7 | 257.8 | 19.8    |
| Average                       |               |                |      | 0    | 0    | 45.8 | 26.7 | 5.5  | 45.6 | 8.4  | 42.5 | 16.7 | 0    | 41.9 | 12.1 | 33.4 | 19.3 | 297.9 | 22.0    |
| FLAX                          |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Flax          | Spring plowed  |      |      |      | 13.4 | 5.2  | 7    | 4.8  | 1.3  | 4.5  | 3.6  | 0    | 8.2  | 0    | 1.3  | 1.6  | 44.6  | 3.7     |
| B                             | do            | Fall plowed    |      |      |      | 15.5 | 8.0  | 1.4  | 6.8  | 3.4  | 3.2  | 7.9  | 0    | 3.6  | 0    | 0    | 0    | 49.8  | 4.2     |
| E                             | do            | Subsoiled      |      |      |      | 12.5 | 8.2  | 2.3  | 6.8  | 3.2  | 7.9  | 9    | 0    | 10.5 | 0    | 2.1  | 0    | 54.4  | 4.5     |
| F                             | do            | Fall listed    |      |      |      | 14.5 | 7.3  | 1.3  | 4.1  | 2.7  | 4.5  | 2.5  | 0    | 10.5 | 0    | 1.3  | 0    | 48.7  | 4.1     |
| Average                       |               |                |      |      |      | 14.0 | 7.2  | 1.4  | 5.6  | 2.7  | 5.0  | 3.7  | 0    | 8.2  | 0    | 1.2  | .4   | 49.4  | 4.1     |
| C or D                        |               |                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | Fallow        | Fallow         |      |      |      | 15.0 | 8.2  | 2.1  | 11.8 | 5.9  | 6.4  | 8.8  | 0    | 10.5 | 0    | 3.4  | 1.8  | 73.9  | 6.2     |
| 12                            | Brome grass   | Fall plowed    | 5.4  | 1.0  | 0    | 20.2 | 1.4  | 5.9  | 11.6 | 1.6  | 9.1  | 5.4  | 0    | 14.1 | 0    | 1.4  | 0    | 71.7  | 5.1     |
| 85                            | Corn          | Spring plowed  |      |      | 0    | 13.9 | 7.5  | 5.7  | 11.8 | 2.1  | 10.7 | 6.4  | 0    | 14.6 | 0    | 3.6  | 2.1  | 78.4  | 6.0     |
| 86                            | do            | do             |      |      | 0    | 14.5 | 7.1  | 2.9  | 0    | 2.7  | 7.5  | 6.8  | 0    | 13.0 | 0    | 2.5  | 3.0  | 60.0  | 4.6     |
| 243                           | do            | do             |      |      | 0    | 13.0 | 5.0  | 3.6  | 7.3  | 1.6  | 6.1  | 4.6  | 0    | 8.9  | 0    | 1.6  | 2.1  | 53.8  | 4.1     |
| 244a                          | do            | Fall plowed    |      |      | 0    | 10.4 | 5.4  | 3.8  | 8.4  | 3.0  | 5.9  | 5.0  | 0    | 12.5 | 0    | 4.5  | 1.4  | 60.3  | 4.6     |
| 244b                          | do            | do             |      |      |      | 8.2  |      |      |      | 1.4  | 7.3  | 4.6  | 0    | 15.2 | 0    | 4.5  | 0    | 41.2  | 4.6     |
| 245a                          | do            | Disked         |      |      | 0    | 15.2 | 6.3  | 2.1  | 7.5  | 2.0  | 6.8  | 7.3  | 0    | 13.9 | 0    | 3.4  | 1.4  | 65.9  | 5.1     |
| 245b                          | do            | do             |      |      |      | 7.0  |      |      |      | 2.0  | 7.1  | 4.6  | 0    | 11.1 | 0    | 3.4  | 1.8  | 37.0  | 4.1     |
| 246a                          | do            | do             |      |      | 0    | 12.9 | 8.2  | 3.2  | 0    | 2.7  | 10.0 | 7.9  | 0    | 13.6 | 0    | 4.3  | 0    | 62.8  | 4.8     |
| 246b                          | do            | do             |      |      |      | 8.8  |      |      |      | 3.4  | 7.9  | 5.7  | 0    | 11.4 | 0    | 3.8  | 0    | 41.0  | 4.6     |
| 247a                          | Wheat         | Spring plowed  |      |      | 0    | 12.9 | 6.4  | 4.6  | 6.4  | 2.3  | 6.4  | 3.0  | 0    | 10.9 | 0    | 2.9  | 2.1  | 57.9  | 4.5     |
| 247b                          | do            | do             |      |      |      | 8.6  |      |      |      | 3.0  | 6.1  | 2.1  | 0    | 12.7 | 0    | 2.5  | 1.8  | 36.8  | 4.1     |
| 248a                          | Oats          | do             |      |      | 0    | 10.9 | 6.1  | 2.2  | 6.8  | 3.0  | 6.6  | 3.8  | 0    | 11.1 | 0    | 1.3  | 1.6  | 53.4  | 4.1     |



## CROP YIELDS AT THE ARDMORE (S. DAK.) FIELD STATION—Continued

TABLE 60.—Annual acre yields of specified crops grown in rotations on individual plots at Ardmore, S. Dak., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912 | 1913 | 1914 | 1915   | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total   | Average |
|-------------------------------|---------------|----------------|------|------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|---------|
| <b>CLOVER <sup>2</sup></b>    |               |                |      |      |      |        |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 11                            | Wheat         | Fall plowed    | 0    | 0    | 0    | 2,800  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2,800   | 200     |
|                               | Clover        |                | 0    | 0    | 0    | 2,100  | 2,700 | 0     | 4,700 | 850   | 0     | 4,700 | 0     | 3,450 | 2,040 | 0     | 0     | 20,540  | 1,467   |
|                               | Average       |                |      | 0    | 0    | 2,450  | 1,350 | 0     | 2,350 | 425   | 0     | 2,350 | 0     | 1,725 | 1,020 | 0     | 0     | 11,670  | 834     |
| <b>POTATOES</b>               |               |                |      |      |      |        |       |       |       |       |       |       |       |       |       |       |       |         |         |
| 75                            | Wheat         | Spring plowed  | 58.7 | 11.5 | 21.6 | 102.8  | 139.1 | 110.0 | 130.0 | 43.0  | 0     | 36.0  | 89.2  | 79.5  | 45.3  | 98.2  | 180.3 | 1,086.5 | 77.6    |
| 76                            | Oats          | do             | 44.6 | 17.2 | 28.2 | 86.1   | 160.0 | 109.2 | 123.0 | 52.8  | 0     | 43.3  | 78.3  | 64.2  | 44.7  | 124.2 | 170.8 | 1,102.0 | 78.7    |
|                               | Average       |                |      | 14.4 | 24.9 | 94.5   | 149.6 | 109.6 | 126.5 | 47.9  | 0     | 39.7  | 83.8  | 71.9  | 45.0  | 111.2 | 175.6 | 1,094.3 | 78.2    |
| <b>SORGO TOTAL</b>            |               |                |      |      |      |        |       |       |       |       |       |       |       |       |       |       |       |         |         |
| A                             | Sorgo         | Spring plowed  |      |      |      | 11,550 | 5,700 | 3,150 | 5,400 | 3,750 | 2,800 | 6,600 | 3,200 | 7,600 | 1,600 | 3,800 | 3,650 | 47,250  | 4,295   |
| B                             | do            | Fall plowed    |      |      |      | 11,450 | 5,200 | 2,200 | 6,200 | 2,600 | 3,500 | 2,700 | 3,700 | 5,800 | 1,800 | 3,750 | 3,990 | 41,540  | 3,776   |
| E                             | do            | Subsoiled      |      |      |      | 12,750 | 7,000 | 3,400 | 7,600 | 4,520 | 5,050 | 3,040 | 4,300 | 7,200 | 1,550 | 5,400 | 3,660 | 52,720  | 4,793   |
| F                             | do            | Fall listed    |      |      |      | 12,780 | 6,700 | 4,350 | 8,000 | 3,950 | 5,200 | 4,760 | 6,000 | 8,900 | 3,050 | 2,700 | 4,060 | 57,670  | 5,243   |
|                               | Average       |                |      |      |      |        | 6,150 | 3,275 | 6,825 | 3,705 | 4,138 | 4,275 | 4,300 | 7,375 | 2,000 | 3,913 | 3,840 | 49,795  | 4,527   |
| C or D                        | Fallow        | Fallowed       |      |      |      | 12,750 | 6,600 | 2,400 | 6,200 | 5,000 | 3,650 | 4,350 | 4,300 | 6,400 | 2,450 | 4,050 | 4,160 | 49,560  | 4,505   |

<sup>2</sup> Sweetclover was substituted for clover from 1920 to 1926.

## CROP YIELDS AT THE SCOTTSBLUFF (NEBR.) FIELD STATION

TABLE 61.—Annual acre yields of specified crops grown in rotations on individual plots at Scottsbluff, Nebr., in one or more years from 1911 to 1921

[For descriptions of rotations, see pages 32-43. For climatic conditions 1912 to 1921, see Figure 22 (p. 34.) Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, clover, and sorgo are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918  | 1919 | 1920 | 1921 | Total | Average |
|-------------------------------|---------------|-------------------|------|------|------|------|------|------|------|-------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>           |               |                   |      |      |      |      |      |      |      |       |      |      |      |       |         |
| A                             | Winter wheat  | Late fall plowed  | 1.1  | 0    | 0    | 12.8 | 11.7 | 2.5  | 5.3  | 2.0   | 2.5  | 6.0  | 3.0  | 45.8  | 4.6     |
| B                             | do            | Early fall plowed | 1.4  | 6.3  | 7.7  | 17.8 | 8.7  | 5.2  | 6.8  | 3.3   | 2.3  | 11.0 | 3.5  | 72.6  | 7.3     |
| E                             | do            | Subsoiled         | 2.1  | 0    | 17.8 | 22.3 | 0    | 5.0  | 10.7 | 4.7   | 3.8  | 12.5 | 5.0  | 81.8  | 8.2     |
| F                             | do            | Fall listed       | 1.5  | 0    | 24.2 | 20.0 | 0    | 3.8  | 4.5  | 5.3   | 3.3  | 13.8 | 4.5  | 79.4  | 7.9     |
|                               | Average       |                   |      | 1.6  | 12.4 | 18.2 | 5.1  | 4.1  | 6.8  | 3.8   | 3.0  | 10.8 | 4.0  | 69.9  | 7.0     |
| C or D                        | Fallow        | Fallowed          | 2.8  | 18.8 | 0    | 33.2 | 35.0 | 5.8  | 20.0 | 23.3  | 11.8 | 7.8  | 11.5 | 167.2 | 16.7    |
| 114                           | Corn          | Disked            | 11.3 | 16.3 | 11.5 | 19.0 | 23.8 | 6.8  | 10.3 | 13.8  | 4.0  | 16.2 | 16.8 | 98.2  | 9.8     |
| 115                           | Winter rye    | Green manured     | 1.3  | 14.0 | 9.0  | 26.7 | 23.8 | 7.0  | 20.0 | 12.7  | 2.7  | 12.7 | 15.2 | 131.1 | 13.1    |
| 116                           | Corn          | Disked            | 4.2  | 13.3 | 10.2 | 16.2 | 25.0 | 6.5  | 19.2 | 12.5  | 7.3  | 19.5 | 13.3 | 91.8  | 9.2     |
| 117                           | Peas          | Green manured     | 1.3  | 12.3 | 6.3  | 23.3 | 24.3 | 6.3  | 15.8 | 18.7  | 2.3  | 14.5 | 11.8 | 96.9  | 9.7     |
| 118                           | Fallow        | Fallowed          | 1.5  | 23.0 | 13.5 | 30.7 | 38.8 | 6.5  | 19.7 | 130.5 | 6.0  | 17.3 | 15.7 | 171.2 | 17.1    |
| 119                           | Corn          | Disked            | 4.3  | 17.2 | 7.7  | 19.3 | 28.3 | 13.8 | 10.3 | 10.5  | 3.5  | 21.8 | 13.0 | 102.8 | 10.3    |
|                               | Average       |                   |      | 16.0 | 9.7  | 22.5 | 24.0 | 7.8  | 18.5 |       | 4.3  | 14.8 | 14.3 | 115.3 | 11.5    |
| <b>SPRING WHEAT</b>           |               |                   |      |      |      |      |      |      |      |       |      |      |      |       |         |
| A                             | Wheat         | Spring plowed     | .5   | 8.7  | 12.0 | 5.7  | 5.0  | 5.5  | 9.2  | 3.7   | 1.2  | 12.3 | 0    | 63.3  | 6.3     |
| B                             | do            | Fall plowed       | .5   | 6.3  | 7.8  | 6.7  | 16.2 | 5.7  | 7.0  | 6.7   | 0    | 14.0 | 0    | 70.4  | 7.0     |
| E                             | do            | Subsoiled         | 1.6  | 12.3 | 6.3  | 9.5  | 6.8  | 7.0  | 11.7 | 9.0   | 0    | 17.0 | 0    | 79.6  | 8.0     |
| F                             | do            | Fall listed       | 1.1  | 15.0 | 7.2  | 6.0  | 5.8  | 4.7  | 11.7 | 2.8   | 0    | 15.3 | 0    | 68.5  | 6.9     |
|                               | Average       |                   |      | 10.6 | 8.3  | 7.0  | 8.5  | 5.7  | 9.9  | 5.6   | .3   | 14.7 | 0    | 70.5  | 7.1     |
| C or D                        | Fallow        | Fallowed          | .5   | 22.5 | 17.3 | 11.7 | 12.5 | 11.2 | 18.7 | 21.3  | 2.7  | 19.3 | 6.0  | 143.2 | 14.3    |
| 1                             | Corn          | Disked            | .4   | 16.2 | 10.3 | 9.8  | 26.2 | 9.0  | 17.5 | 11.7  | 4.0  | 16.5 | 8.5  | 129.7 | 13.0    |
| 2                             | do            | Spring plowed     | 1.5  | 17.3 | 11.3 | 11.0 | 12.8 | 5.9  | 15.8 | 9.3   | 4.0  | 16.2 | 8.0  | 111.6 | 11.2    |
| 3                             | do            | Fall plowed       | .3   | 11.7 | 8.0  | 9.5  | 30.0 | 7.7  | 18.0 | 10.3  | 3.3  | 17.7 | 6.3  | 122.5 | 12.3    |
| 4                             | Oats          | do                | 3.8  | 9.7  | 8.5  | 10.8 | 25.3 | 7.7  | 17.8 | 11.8  | 0    | 15.2 | 3.2  | 110.0 | 11.0    |
| 5                             | Fallow        | Fallowed          | .3   | 27.8 | 19.0 | 13.8 | 13.2 | 8.2  | 19.8 | 24.5  | 5.8  | 21.3 | 11.7 | 165.1 | 16.5    |
| 8                             | Oats          | Fall plowed       | .7   | 5.7  | 9.5  | 9.8  | 23.2 | 6.5  | 14.5 | 7.2   | 1.2  | 18.0 | 0    | 95.6  | 9.6     |
| 9                             | do            | Spring plowed     | 7.8  | 11.7 | 9.5  | 12.0 | 11.5 | 5.7  | 19.7 | 8.0   | 1.0  | 22.5 | 2.8  | 104.4 | 10.4    |
| 10                            | Corn          | Disked            | 4.2  | 26.0 | 11.2 | 11.3 | 24.2 | 0    | 19.2 | 10.0  | 2.3  | 18.5 | 5.3  | 128.0 | 12.8    |
| 11                            | do            | do                | 1.5  | 20.0 | 14.0 | 11.0 | 26.7 | 11.7 | 16.8 | 10.3  | 3.2  | 20.5 | 6.3  | 140.5 | 14.1    |
| 12                            | do            | do                | 1.6  | 15.3 | 13.0 | 11.3 | 27.0 | 8.8  | 13.0 | 8.3   | 2.2  | 17.2 | 3.0  | 119.1 | 11.9    |
| 14                            | do            | do                | .9   | 9.7  | 8.8  | 9.2  | 7.8  | 9.8  | 16.0 | 14.7  | 3.7  | 17.5 | 6.8  | 104.0 | 10.4    |
| 15                            | Winter rye    | Green manured     | .3   | 15.0 | 13.0 | 13.2 | 27.7 | 11.0 | 20.2 | 23.0  | 1.3  | 21.2 | 10.5 | 156.1 | 15.6    |
| 16                            | Corn          | Disked            | 4.9  | 20.0 | 10.8 | 16.0 | 8.8  | 9.8  | 17.0 | 12.2  | 4.3  | 21.3 | 8.2  | 128.4 | 12.8    |
| 17                            | Peas          | Green manured     | .5   | 11.7 | 14.2 | 12.0 | 28.3 | 8.7  | 16.8 | 20.2  | 2.7  | 18.3 | 8.7  | 141.6 | 14.2    |
| 18                            | Fallow        | Fallowed          | .3   | 33.0 | 18.0 | 15.8 | 10.5 | 14.5 | 19.5 | 24.3  | 3.7  | 18.8 | 12.8 | 170.9 | 17.1    |
| 19                            | Corn          | Disked            | 3.9  | 15.2 | 12.5 | 11.2 | 9.3  | 7.5  | 16.3 | 13.0  | 2.8  | 17.7 | 6.3  | 110.8 | 11.1    |
| 41                            | do            | do                | 2.8  | 27.3 | 13.5 | 14.2 | 27.8 | 5.3  | 14.3 | 7.5   | 2.7  | 17.3 | 7.0  | 136.9 | 13.7    |
| 42                            | do            | do                | 3.0  | 27.5 | 13.3 | 13.7 | 32.0 | 8.5  | 14.8 | 7.0   | 1.7  | 17.0 | 9.2  | 144.7 | 14.5    |
| 43                            | do            | Fall plowed       | 4.2  | 20.8 | 9.8  | 9.5  | 32.3 | 7.7  | 15.8 | 5.2   | 1.5  | 16.8 | 4.3  | 123.7 | 12.4    |
| 44                            | do            | Disked            | 1.3  | 17.0 | 11.2 | 8.7  | 27.5 | 9.2  | 14.8 | 8.2   | 2.7  | 18.0 | 6.5  | 123.8 | 12.4    |
| 48                            | Sorgo         | Spring plowed     | 1.7  | 18.7 | 11.2 | 9.0  | 5.5  | 7.3  | 10.2 | 7.5   | 2.0  | 18.3 | 8.7  | 98.4  | 9.8     |
| 49                            | Corn          | Disked            | 1.2  | 16.5 | 11.2 | 5.8  | 5.7  | 9.2  | 14.8 | 9.7   | 3.5  | 13.3 | 6.5  | 96.2  | 9.6     |
|                               | Average       |                   |      | 17.9 | 11.9 | 11.3 | 20.2 | 8.2  | 16.5 | 12.0  | 2.7  | 18.1 | 6.8  | 125.5 | 12.6    |

<sup>1</sup> Reseeded to spring wheat.<sup>2</sup> Hailed Aug. 6.

## CROP YIELDS AT THE SCOTTSBLUFF (NEBR.) FIELD STATION—Continued

TABLE 61.—Annual acre yields of specified crops grown in rotations on individual plots at Scottsbluff, Nebr., in one or more years from 1911 to 1921—Continued

| Crop and rotation<br>No. or plot | Previous crop     | Tillage method     | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | Total  | Average |
|----------------------------------|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| OATS                             |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                           | Oats.....         | Spring plowed..... | 0     | 19.4  | 15.0  | 8.4   | 43.1  | 10.3  | 24.1  | 13.4  | 3.8   | 32.5  | 4.7   | 174.7  | 17.5    |
| B.....                           | do.....           | Fall plowed.....   | 0     | 21.6  | 16.9  | 14.7  | 39.7  | 7.2   | 10.3  | 18.1  | 0     | 33.4  | 0     | 161.9  | 16.2    |
| E.....                           | do.....           | Subsoiled.....     | 0     | 27.8  | 17.5  | 15.9  | 48.1  | 2.8   | 20.0  | 15.9  | 0     | 3.4   | 3.8   | 155.2  | 15.5    |
| F.....                           | do.....           | Fall listed.....   | 0     | 25.3  | 23.1  | 12.8  | 49.9  | 3.8   | 18.1  | 9.4   | 0     | 24.7  | 6.3   | 173.4  | 17.3    |
| Average.....                     |                   |                    |       | 23.5  | 18.1  | 13.0  | 45.2  | 6.0   | 18.1  | 14.2  | 1.0   | 23.5  | 3.7   | 106.3  | 16.6    |
| C or D.....                      | Fallow.....       | Fallow.....        | 0     | 43.8  | 40.6  | 26.9  | 53.4  | 5.3   | 23.1  | 28.4  | 4.4   | 19.4  | 11.6  | 256.9  | 25.7    |
| 1.....                           | Wheat.....        | Fall plowed.....   | 0     | 10.9  | 17.5  | 16.3  | 45.0  | 6.9   | 27.5  | 22.2  | 0     | 39.7  | 0     | 186.0  | 18.6    |
| 2.....                           | do.....           | Spring plowed..... | 0     | 23.4  | 28.1  | 16.9  | 53.8  | 5.9   | 35.3  | 20.0  | 0     | 48.4  | 7.5   | 239.3  | 23.9    |
| 3.....                           | do.....           | Fall plowed.....   | 0     | 8.4   | 24.1  | 19.1  | 44.1  | 3.4   | 26.6  | 22.2  | 0     | 36.6  | 4.7   | 189.2  | 18.9    |
| 4.....                           | Corn.....         | Disked.....        | 8     | 31.6  | 15.6  | 12.5  | 51.6  | 3.1   | 21.9  | 24.4  | 2.8   | 24.7  | 15.0  | 203.2  | 20.3    |
| 5.....                           | Wheat.....        | Fall plowed.....   | 0     | 10.6  | 22.8  | 19.7  | 49.4  | 3.1   | 29.7  | 25.9  | 0     | 39.7  | 5.0   | 205.9  | 20.6    |
| 6.....                           | Barley.....       | do.....            | 0     | 9.1   | 22.2  | 15.9  | 43.1  | 3.1   | 24.7  | 21.9  | 0     | 35.0  | 6.3   | 181.3  | 18.1    |
| 7.....                           | Corn.....         | Spring plowed..... | 0     | 30.6  | 16.6  | 11.9  | 30.6  | 13.8  | 27.8  | 23.8  | 1.6   | 36.6  | 12.2  | 205.5  | 20.6    |
| 8.....                           | Fallow.....       | Fallow.....        | 0     | 44.4  | 36.3  | 15.6  | 42.2  | 5.9   | 22.8  | 32.8  | 6.6   | 45.3  | 17.8  | 299.7  | 27.0    |
| 9.....                           | Corn.....         | Spring plowed..... | 0     | 36.9  | 25.0  | 15.9  | 64.1  | 18.4  | 28.8  | 26.3  | 3.8   | 38.4  | 8.8   | 266.4  | 26.6    |
| 10.....                          | Bromegrass.....   | Fall plowed.....   | 0     | 49.7  | 23.8  | 15.3  | 58.8  | 7.5   | 19.7  | 13.1  | 0     | 34.7  | 0     | 222.6  | 22.3    |
| 11.....                          | Clover.....       | do.....            | 0     | 63.1  | 20.0  | 17.8  | 47.2  | 18.4  | 19.1  | 25.6  | 0     | 48.8  | 5.0   | 265.0  | 26.5    |
| 12.....                          | Flax.....         | do.....            | 0     | 38.4  | 25.0  | 10.0  | 54.4  | 15.0  | 20.9  | 11.6  | 0     | 39.7  | 5.0   | 220.0  | 22.0    |
| 14.....                          | Winter rye.....   | Green manured..... | 0     | 27.2  | 37.8  | 20.9  | 54.4  | 7.5   | 33.8  | 36.9  | 2.2   | 30.0  | 18.8  | 299.5  | 27.0    |
| 15.....                          | Corn.....         | Disked.....        | 9     | 39.1  | 22.5  | 18.8  | 63.4  | 8.8   | 25.0  | 33.1  | 6.6   | 36.3  | 9.7   | 233.3  | 23.3    |
| 16.....                          | Peas.....         | Green manured..... | 0     | 34.4  | 44.4  | 19.7  | 59.4  | 3.1   | 25.3  | 39.1  | 3.8   | 34.4  | 19.7  | 283.3  | 28.3    |
| 17.....                          | Corn.....         | Disked.....        | 0     | 42.5  | 19.1  | 14.7  | 60.0  | 10.3  | 25.9  | 27.5  | 5.9   | 40.6  | 6.9   | 253.4  | 25.3    |
| 18.....                          | do.....           | do.....            | 0     | 50.0  | 19.1  | 19.1  | 54.7  | 14.1  | 26.3  | 31.9  | 6.6   | 41.3  | 25.9  | 289.0  | 28.9    |
| 19.....                          | Fallow.....       | Fallow.....        | 0     | 53.8  | 51.6  | 32.8  | 63.1  | 5.3   | 28.4  | 43.8  | 4.4   | 27.8  | 21.6  | 332.6  | 33.3    |
| 40.....                          | Corn.....         | Disked.....        | 0     | 32.8  | 23.1  | 11.6  | 51.9  | 18.8  | 21.9  | 24.4  | 0     | 30.3  | 20.9  | 235.7  | 23.6    |
| 41.....                          | Bromegrass.....   | Fall plowed.....   | 0     | 57.5  | 31.3  | 13.4  | 43.8  | 9.4   | 11.6  | 23.1  | 0     | 39.7  | 6.9   | 236.7  | 23.7    |
| 42.....                          | Alfalfa.....      | do.....            | 0     | 41.9  | 13.4  | 5.6   | 45.9  | 7.5   | 14.4  | 15.9  | 2.5   | 39.7  | 4.7   | 191.5  | 19.2    |
| 43.....                          | Wheat.....        | do.....            | 0     | 16.3  | 17.2  | 15.6  | 45.3  | 6.9   | 20.0  | 13.1  | 0     | 41.3  | 5.9   | 181.6  | 18.2    |
| 45.....                          | Winter rye.....   | Green manured..... | 0     | 31.6  | 9.7   | 13.4  | 45.3  | 20.3  | 29.4  | 36.9  | 6.6   | 35.0  | 26.6  | 254.8  | 25.5    |
| 46.....                          | Peas.....         | do.....            | 0     | 33.4  | 16.9  | 28.4  | 64.1  | 24.4  | 31.9  | 35.9  | 2.2   | 38.4  | 24.4  | 300.0  | 30.0    |
| 47.....                          | Sorgho.....       | Spring plowed..... | 0     | 35.0  | 39.7  | 14.4  | 55.3  | 13.8  | 21.3  | 22.8  | 4.4   | 47.2  | 9.4   | 263.3  | 26.3    |
| 48.....                          | Wheat.....        | do.....            | 0     | 27.5  | 23.4  | 11.9  | 65.9  | 6.3   | 25.3  | 18.1  | 3.8   | 40.9  | 6.3   | 229.4  | 22.9    |
| 114.....                         | Winter rye.....   | Green manured..... | 0     | 41.9  | 32.8  | 21.9  | 61.9  | 7.2   | 27.5  | 40.0  | 7.5   | 34.7  | 24.7  | 300.1  | 30.0    |
| 115.....                         | Corn.....         | Disked.....        | 0     | 51.3  | 23.1  | 16.3  | 56.9  | 23.1  | 24.1  | 27.5  | 7.8   | 39.1  | 22.2  | 291.4  | 29.1    |
| 116.....                         | Peas.....         | Green manured..... | 0     | 20.9  | 26.9  | 22.2  | 60.0  | 9.4   | 25.3  | 39.7  | 2.5   | 32.8  | 29.1  | 268.8  | 26.9    |
| 117.....                         | Corn.....         | Disked.....        | 0     | 45.9  | 16.9  | 18.8  | 55.0  | 20.3  | 19.1  | 17.8  | 5.9   | 35.6  | 21.3  | 256.6  | 25.7    |
| 118.....                         | do.....           | do.....            | 0     | 50.6  | 18.8  | 17.2  | 61.3  | 21.9  | 24.7  | 28.8  | 5.0   | 38.4  | 14.7  | 281.4  | 28.1    |
| 119.....                         | Fallow.....       | Fallow.....        | 0     | 40.0  | 47.5  | 24.4  | 69.4  | 13.8  | 33.1  | 43.1  | 2.8   | 36.6  | 30.3  | 341.0  | 34.1    |
| Average.....                     |                   |                    |       | 35.3  | 25.4  | 17.1  | 53.8  | 11.1  | 25.0  | 27.2  | 3.0   | 37.7  | 13.7  | 249.3  | 24.9    |
| CORN TOTAL                       |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                           | Corn.....         | Spring plowed..... | 1,300 | 6,160 | 3,740 | 1,780 | 1,450 | 2,500 | 2,060 | 3,700 | 1,840 | 2,250 | 2,020 | 27,500 | 2,750   |
| B.....                           | do.....           | Fall plowed.....   | 1,670 | 5,060 | 3,980 | 2,650 | 1,410 | 2,630 | 2,700 | 3,000 | 2,960 | 1,900 | 2,120 | 28,410 | 2,841   |
| Average.....                     |                   |                    |       | 5,610 | 3,800 | 2,215 | 1,430 | 2,565 | 2,380 | 3,350 | 2,400 | 2,075 | 2,070 | 27,955 | 2,796   |
| C or D.....                      | Fallow.....       | Fallow.....        | 1,930 | 9,080 | 5,160 | 3,680 | 1,900 | 2,730 | 2,440 | 2,980 | 5,260 | 1,880 | 2,740 | 37,850 | 3,785   |
| 1.....                           | Oats.....         | Fall plowed.....   | 1,430 | 7,370 | 3,480 | 2,190 | 2,990 | 3,570 | 4,080 | 2,520 | 1,680 | 4,600 | 1,280 | 33,760 | 3,376   |
| 2.....                           | do.....           | Spring plowed..... | 1,550 | 8,550 | 4,440 | 2,150 | 1,610 | 3,800 | 4,230 | 3,550 | 1,400 | 4,700 | 2,230 | 36,660 | 3,666   |
| 3.....                           | do.....           | Fall plowed.....   | 1,150 | 6,820 | 3,430 | 2,000 | 2,350 | 2,810 | 3,290 | 2,780 | 1,560 | 5,160 | 1,380 | 31,630 | 3,163   |
| 4.....                           | Wheat.....        | do.....            | 2,130 | 7,730 | 4,340 | 2,050 | 1,880 | 3,580 | 2,920 | 2,850 | 1,920 | 3,000 | 1,520 | 31,790 | 3,179   |
| 6.....                           | Oats.....         | do.....            | 1,210 | 7,440 | 4,080 | 2,250 | 2,160 | 3,770 | 2,580 | 2,520 | 1,980 | 2,900 | 1,780 | 31,460 | 3,146   |
| 7.....                           | Barley.....       | Spring plowed..... | 1,640 | 8,200 | 4,220 | 1,590 | 2,770 | 3,080 | 3,430 | 3,370 | 1,460 | 4,650 | 1,990 | 34,760 | 3,476   |
| 9.....                           | Wheat.....        | do.....            | 3,060 | 8,070 | 5,040 | 1,630 | 2,500 | 2,790 | 3,540 | 2,500 | 1,300 | 4,300 | 1,880 | 33,670 | 3,367   |
| 10.....                          | Oats.....         | do.....            | 3,260 | 7,150 | 4,980 | 1,240 | 3,240 | 2,470 | 3,600 | 2,850 | 2,100 | 3,800 | 2,040 | 33,510 | 3,351   |
| 11.....                          | do.....           | do.....            | 1,440 | 7,950 | 4,520 | 1,630 | 3,030 | 2,770 | 3,660 | 2,650 | 1,580 | 3,700 | 2,290 | 33,810 | 3,381   |
| 12.....                          | do.....           | do.....            | 1,900 | 8,330 | 5,600 | 1,430 | 2,820 | 3,160 | 3,890 | 3,020 | 1,550 | 3,550 | 1,920 | 35,270 | 3,527   |
| 14.....                          | do.....           | do.....            | 2,430 | 7,340 | 3,500 | 1,460 | 3,550 | 3,290 | 3,700 | 3,370 | 2,400 | 4,220 | 2,210 | 35,100 | 3,510   |
| 15.....                          | Wheat.....        | do.....            | 1,780 | 8,130 | 5,700 | 1,910 | 3,160 | 3,760 | 4,000 | 3,160 | 2,820 | 4,100 | 1,670 | 38,410 | 3,841   |
| 16.....                          | Oats.....         | do.....            | 1,980 | 6,890 | 4,820 | 1,410 | 3,280 | 3,730 | 3,580 | 4,340 | 2,850 | 4,240 | 2,180 | 37,320 | 3,732   |
| 17.....                          | Wheat.....        | do.....            | 1,690 | 7,650 | 5,640 | 1,610 | 2,620 | 3,780 | 4,700 | 4,090 | 3,040 | 4,000 | 1,800 | 38,930 | 3,893   |
| 18.....                          | do.....           | do.....            | 1,860 | 7,890 | 4,900 | 1,680 | 2,090 | 3,610 | 4,600 | 3,410 | 1,870 | 3,700 | 2,230 | 35,970 | 3,597   |
| 19.....                          | Oats.....         | do.....            | 1,280 | 7,060 | 4,960 | 1,500 | 2,740 | 3,960 | 3,540 | 3,470 | 2,500 | 4,220 | 2,290 | 36,240 | 3,624   |
| 40.....                          | do.....           | Fall plowed.....   | 1,630 | 7,920 | 4,180 | 1,550 | 1,480 | 3,230 | 1,500 | 2,600 | 1,590 | 3,060 | 1,760 | 28,870 | 2,887   |
| 41.....                          | do.....           | Spring plowed..... | 3,950 | 7,880 | 6,120 | 1,420 | 2,870 | 3,220 | 2,740 | 3,360 | 2,590 | 3,950 | 2,080 | 36,230 | 3,623   |
| 42.....                          | do.....           | do.....            | 3,020 | 7,480 | 5,180 | 1,390 | 3,360 | 2,230 | 2,760 | 3,250 | 2,360 | 4,350 | 1,880 | 34,240 | 3,424   |
| 43.....                          | do.....           | Fall plowed.....   | 1,250 | 5,310 | 3,600 | 1,870 | 3,030 | 3,290 | 2,220 | 2,160 | 800   | 2,220 | 1,640 | 26,140 | 2,614   |
| 44.....                          | Sorgho.....       | do.....            | 830   | 6,020 | 4,760 | 1,510 | 1,600 | 4,190 | 3,350 | 3,140 | 2,250 | 3,800 | 2,140 | 32,820 | 3,282   |
| 45.....                          | Oats.....         | do.....            | 1,960 | 6,020 | 4,600 | 3,660 | 2,060 | 3,760 | 4,080 | 2,960 | 2,280 | 4,100 | 1,210 | 34,730 | 3,473   |
| 46.....                          | do.....           | do.....            | 2,350 | 6,540 | 5,100 | 1,720 | 1,910 | 3,870 | 3,900 | 3,700 | 1,100 | 4,700 | 1,690 | 34,530 | 3,453   |
| 47.....                          | do.....           | do.....            | 1,810 | 5,570 | 3,960 | 1,470 | 1,500 | 3,670 | 3,100 | 3,400 | 1,670 | 4,400 | 1,310 | 30,050 | 3,005   |
| 49.....                          | Wheat.....        | do.....            | 2,120 | 7,220 | 3,520 | 1,290 | 1,310 | 3,480 | 1,200 | 2,220 | 1,340 | 4,050 | 1,180 | 28,830 | 2,883   |
| 114.....                         | Oats.....         | Spring plowed..... | 1,730 | 6,900 | 4,380 | 1,620 | 2,360 | 3,950 | 3,500 | 3,040 | 2,220 | 3,200 | 2,990 | 34,160 | 3,416   |
| 115.....                         | Winter wheat..... | do.....            | 1,580 | 7,330 | 3,980 | 1,630 | 1,960 | 2,790 | 3,900 | 3,540 | 1,640 | 3,700 | 2,180 | 32,650 | 3,265   |
| 116.....                         | Oats.....         | do.....            | 1,160 | 7,300 | 3,620 | 1,380 | 2,730 | 3,460 | 4,080 | 3,180 | 2,280 | 3,950 | 2,120 | 34,100 | 3,410   |



## CROP YIELDS AT THE SCOTTSBLUFF (NEBR.) FIELD STATION—Continued

TABLE 61.—Annual acre yields of specified crops grown in rotations on individual plots at Scottsbluff, Nebr., in one or more years from 1911 to 1921—Continued

| Crop and rotation No. or plot | Previous crop     | Tillage method     | 1911  | 1912   | 1913  | 1914 | 1915  | 1916   | 1917  | 1918  | 1919  | 1920  | 1921  | Total  | Average |
|-------------------------------|-------------------|--------------------|-------|--------|-------|------|-------|--------|-------|-------|-------|-------|-------|--------|---------|
| <b>CORN, GRAIN</b>            |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| A.....                        | Corn.....         | Spring plowed..... | 5.0   | 40.9   | 27.8  | 15.0 | 10.1  | 21.7   | 16.8  | 16.7  | 10.6  | 15.3  | 13.1  | 188.0  | 18.8    |
| B.....                        | do.....           | Fall plowed.....   | 8.9   | 38.0   | 32.2  | 20.1 | 10.1  | 22.1   | 22.2  | 22.8  | 16.4  | 13.2  | 12.2  | 209.3  | 20.9    |
| Average.....                  |                   |                    |       | 39.5   | 30.0  | 17.6 | 10.1  | 21.9   | 19.5  | 19.8  | 13.5  | 14.3  | 12.7  | 198.7  | 19.9    |
| C or D.....                   | Fallow.....       | Fallow.....        | 6.1   | 49.7   | 35.6  | 31.7 | 15.1  | 24.0   | 20.0  | 23.6  | 26.9  | 12.5  | 16.4  | 255.5  | 25.6    |
| 1.....                        | Oats.....         | Fall plowed.....   | 4.7   | 32.4   | 24.7  | 14.6 | 20.1  | 30.1   | 35.3  | 16.7  | 2.6   | 30.6  | 3.9   | 201.0  | 20.1    |
| 2.....                        | do.....           | Spring plowed..... | 7.9   | 45.0   | 30.6  | 13.2 | 12.4  | 35.3   | 36.3  | 22.9  | 2.6   | 33.3  | 9.4   | 241.0  | 24.1    |
| 3.....                        | do.....           | Fall plowed.....   | 2.1   | 34.6   | 21.9  | 13.9 | 14.9  | 30.7   | 27.9  | 15.7  | 1.3   | 32.6  | 4.7   | 198.2  | 19.8    |
| 4.....                        | Wheat.....        | do.....            | 9.0   | 40.4   | 28.3  | 12.9 | 12.6  | 35.0   | 25.6  | 18.3  | 0     | 23.6  | 4.4   | 201.1  | 20.1    |
| 6.....                        | Oats.....         | do.....            | 2.3   | 37.7   | 28.9  | 15.1 | 12.3  | 34.6   | 23.3  | 16.9  | 0     | 25.0  | 3.2   | 197.0  | 19.7    |
| 7.....                        | Barley.....       | Spring plowed..... | 6.3   | 40.7   | 26.7  | 8.2  | 16.7  | 28.3   | 31.0  | 17.5  | 3.3   | 29.2  | 8.2   | 209.8  | 21.0    |
| 9.....                        | Wheat.....        | do.....            | 14.4  | 38.1   | 32.5  | 7.3  | 16.0  | 25.1   | 31.4  | 17.5  | 3.6   | 30.6  | 7.4   | 209.5  | 21.0    |
| 10.....                       | Oats.....         | do.....            | 18.3  | 39.3   | 33.1  | 4.7  | 20.3  | 22.9   | 30.6  | 16.7  | 0     | 28.5  | 5.4   | 201.5  | 20.2    |
| 11.....                       | do.....           | do.....            | 4.7   | 45.7   | 27.8  | 7.3  | 16.7  | 24.3   | 30.8  | 15.6  | 0     | 29.9  | 8.9   | 207.0  | 20.7    |
| 12.....                       | do.....           | do.....            | 6.4   | 44.0   | 38.9  | 5.4  | 17.4  | 29.2   | 31.8  | 16.3  | 0     | 23.9  | 5.1   | 212.0  | 21.2    |
| 14.....                       | do.....           | do.....            | 7.6   | 37.7   | 23.1  | 6.7  | 15.0  | 29.6   | 32.8  | 22.2  | 8.1   | 30.0  | 10.6  | 215.8  | 21.6    |
| 15.....                       | Wheat.....        | do.....            | 5.1   | 43.3   | 33.3  | 7.1  | 13.4  | 32.8   | 29.2  | 22.2  | 8.9   | 26.4  | 5.7   | 222.3  | 22.2    |
| 16.....                       | Oats.....         | do.....            | 9.9   | 37.3   | 33.6  | 8.5  | 16.9  | 33.8   | 29.2  | 26.3  | 5.8   | 30.7  | 10.1  | 232.2  | 23.2    |
| 17.....                       | Wheat.....        | do.....            | 4.6   | 38.6   | 33.9  | 8.5  | 11.1  | 36.1   | 34.7  | 26.8  | 11.4  | 25.0  | 6.4   | 232.5  | 23.3    |
| 18.....                       | do.....           | do.....            | 7.7   | 42.7   | 26.9  | 8.1  | 6.6   | 31.5   | 32.8  | 23.1  | 6.5   | 27.1  | 13.8  | 219.1  | 21.9    |
| 19.....                       | Oats.....         | do.....            | 3.4   | 40.1   | 35.6  | 7.8  | 15.1  | 30.6   | 28.6  | 17.9  | 3.6   | 29.4  | 10.7  | 219.4  | 21.9    |
| 40.....                       | do.....           | Fall plowed.....   | 3.3   | 45.3   | 23.6  | 9.6  | 7.4   | 27.9   | 9.7   | 13.6  | 0     | 21.7  | 9.9   | 168.7  | 16.9    |
| 41.....                       | do.....           | Spring plowed..... | 20.1  | 44.0   | 43.9  | 5.8  | 19.6  | 26.1   | 23.6  | 19.8  | 3.9   | 28.3  | 5.3   | 220.3  | 22.0    |
| 42.....                       | do.....           | do.....            | 14.9  | 42.6   | 32.8  | 4.0  | 20.3  | 21.3   | 23.9  | 13.9  | 2.5   | 24.7  | 4.6   | 190.6  | 19.1    |
| 43.....                       | do.....           | Fall plowed.....   | 7.9   | 32.3   | 18.9  | 7.9  | 18.7  | 32.1   | 18.3  | 7.2   | 0     | 35.3  | 3.1   | 173.8  | 17.4    |
| 44.....                       | Sorgo.....        | do.....            | 6.9   | 43.2   | 34.4  | 8.5  | 16.0  | 34.6   | 25.4  | 15.1  | 0     | 29.2  | 15.1  | 221.5  | 22.2    |
| 45.....                       | Oats.....         | do.....            | 9.1   | 28.1   | 36.9  | 29.4 | 13.7  | 33.6   | 30.3  | 14.2  | 4.4   | 3.3   | 3.6   | 217.3  | 21.7    |
| 46.....                       | do.....           | do.....            | 14.4  | 27.0   | 36.1  | 10.3 | 10.1  | 34.8   | 30.6  | 23.6  | 2.3   | 32.6  | 4.7   | 212.1  | 21.2    |
| 47.....                       | do.....           | do.....            | 13.6  | 29.6   | 27.8  | 10.1 | 8.6   | 34.8   | 26.4  | 9.7   | 0     | 33.6  | 2.9   | 183.5  | 18.4    |
| 49.....                       | Wheat.....        | do.....            | 4.0   | 38.9   | 19.4  | 7.2  | 6.0   | 28.6   | 9.7   | 8.6   | 0     | 30.0  | 2.5   | 150.9  | 15.1    |
| 114.....                      | Oats.....         | Spring plowed..... | 8.7   | 37.1   | 34.4  | 9.4  | 10.3  | 33.5   | 27.8  | 17.2  | 5.4   | 23.9  | 13.1  | 212.1  | 21.2    |
| 115.....                      | Winter wheat..... | do.....            | 4.0   | 42.6   | 20.6  | 9.3  | 5.1   | 27.6   | 29.7  | 22.9  | 8.1   | 24.4  | 10.1  | 200.4  | 20.0    |
| 116.....                      | Oats.....         | do.....            | 2.4   | 35.0   | 22.5  | 6.4  | 10.7  | 33.3   | 31.7  | 14.7  | 3.3   | 30.0  | 7.9   | 195.5  | 19.6    |
| 117.....                      | Winter wheat..... | do.....            | 4.0   | 44.4   | 39.7  | 7.6  | 6.4   | 29.0   | 28.9  | 19.2  | 9.2   | 27.1  | 7.5   | 219.0  | 21.9    |
| 118.....                      | do.....           | do.....            | 11.4  | 40.9   | 32.5  | 6.5  | 4.9   | 25.7   | 33.1  | 19.4  | 9.3   | 33.3  | 11.4  | 217.0  | 21.7    |
| 119.....                      | Oats.....         | do.....            | 6.3   | 35.7   | 25.6  | 7.5  | 10.4  | 28.1   | 30.6  | 17.2  | 3.1   | 33.9  | 6.5   | 198.6  | 19.9    |
| Average.....                  |                   |                    |       | 38.8   | 30.0  | 9.3  | 13.1  | 30.4   | 27.8  | 17.7  | 3.5   | 28.6  | 7.3   | 206.5  | 20.7    |
| E.....                        | Corn.....         | Subsoiled.....     | 4.4   | 40.0   | 26.1  | 14.2 | 13.6  | 23.2   | 25.0  | 26.9  | 22.5  | 18.1  | 13.6  | 223.2  | 22.3    |
| F.....                        | do.....           | Spring listed..... | 5.7   | 21.6   | 38.6  | 14.6 | 8.3   | 15.8   | 10.0  | 17.3  | 16.0  | 13.2  | 15.0  | 170.4  | 17.0    |
| Average.....                  |                   |                    |       | 30.8   | 32.4  | 14.4 | 11.0  | 19.5   | 17.5  | 22.1  | 19.3  | 15.7  | 14.3  | 196.8  | 19.7    |
| <b>BARLEY</b>                 |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| A.....                        | Barley.....       | Spring plowed..... | 0.8   | 21.3   | 0     | 6.0  | 33.6  | 9.0    | 17.7  | 15.0  | 14.2  | 33.8  | 5.4   | 162.0  | 16.2    |
| B.....                        | do.....           | Fall plowed.....   | 1.4   | 23.5   | 0     | 4.4  | 35.4  | 10.0   | 10.8  | 10.6  | 2.3   | 34.6  | 3.8   | 135.4  | 13.5    |
| E.....                        | do.....           | Subsoiled.....     | 2.2   | 24.8   | 0     | 5.2  | 26.0  | 6.0    | 5.8   | 9.6   | 2.1   | 11.3  | 2.9   | 93.7   | 9.4     |
| F.....                        | do.....           | Fall listed.....   | 2.3   | 23.8   | 0     | 5.0  | 21.3  | 2.5    | 6.7   | 3.2   | 1.9   | 9.8   | 4.0   | 78.2   | 7.8     |
| Average.....                  |                   |                    |       | 23.4   | 0     | 5.2  | 30.6  | 6.9    | 10.3  | 9.6   | 5.1   | 22.4  | 4.0   | 117.3  | 11.7    |
| C or D.....                   | Fallow.....       | Fallow.....        | 1.1   | 39.6   | 0     | 15.6 | 56.3  | 19.8   | 26.5  | 43.8  | 6.5   | 37.3  | 23.3  | 268.7  | 26.9    |
| 6.....                        | Corn.....         | Disked.....        | 1.8   | 31.3   | 0     | 5.8  | 46.7  | 6.3    | 12.5  | 17.5  | 3.3   | 12.1  | 15.8  | 151.3  | 15.1    |
| 7.....                        | Oats.....         | Spring plowed..... | 4.6   | 22.5   | 0     | 11.9 | 46.7  | 2.7    | 28.8  | 18.1  | 2.9   | 35.4  | 4.4   | 173.4  | 17.3    |
| Average.....                  |                   |                    |       | 26.9   | 0     | 8.9  | 46.7  | 4.5    | 20.7  | 17.8  | 3.1   | 23.8  | 10.1  | 162.4  | 16.2    |
| <b>FLAX</b>                   |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| 12.....                       | Bromegrass.....   | Spring plowed..... |       | 11.8   | 3.6   | 0    | 7.1   | 0      | 2.1   |       | 0     | 0     | 0     | 24.6   | 2.7     |
| <b>BROMEGRASS</b>             |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| 10.....                       | Wheat.....        | Disked.....        |       | 0      | 0     | 0    | 0     | 0      | 1,000 | 0     | 0     | 0     | 0     | 1,000  | 100     |
|                               | Bromegrass.....   | do.....            |       | 0      | 1,300 | 700  | 1,100 | 0      | 1,140 | 920   | 0     | 0     | 0     | 5,160  | 516     |
| 12.....                       | Wheat.....        | Disked.....        |       | 220    | 0     | 0    | 0     | 0      | 160   | 0     | 0     | 0     | 0     | 380    | 38      |
|                               | Bromegrass.....   | do.....            |       | 1,460  | 1,150 | 440  | 1,140 | 500    | 820   | 840   | 0     | 0     | 0     | 6,350  | 635     |
| 41.....                       | Wheat.....        | Disked.....        |       | 300    | 0     | 160  | 0     | 0      | 700   | 0     | 0     | 0     | 0     | 1,160  | 116     |
|                               | Bromegrass.....   | do.....            |       | 560    | 1,250 | 280  | 1,400 | 410    | 1,100 | 900   | 0     | 0     | 0     | 5,900  | 590     |
|                               | do.....           | do.....            |       | 0      | 1,150 | 420  | 1,100 | 330    | 1,240 | 340   | 0     | 0     | 0     | 4,580  | 458     |
| Average.....                  |                   |                    |       | 363    | 693   | 286  | 677   | 177    | 880   | 429   | 0     | 0     | 0     | 3,504  | 350     |
| <b>ALFALFA</b>                |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| 42.....                       | Wheat.....        | Fall plowed.....   |       | 0      | 860   | 0    | 0     | 0      | 0     | 0     | 0     | 0     | 0     | 860    | 86      |
|                               | Alfalfa.....      | do.....            |       | 0      | 2,040 | 400  | 3,200 | 900    | 1,720 | 1,140 | 1,060 | 0     | 0     | 10,460 | 1,046   |
|                               | do.....           | do.....            |       | 0      | 250   | 814  | 5,030 | 440    | 1,560 | 1,020 | 0     | 840   | 810   | 10,764 | 1,076   |
| Average.....                  |                   |                    |       | 0      | 1,050 | 405  | 2,743 | 447    | 1,093 | 720   | 353   | 280   | 270   | 7,361  | 736     |
| <b>CLOVER<sup>3</sup></b>     |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| 11.....                       | Wheat.....        | Fall plowed.....   |       | 0      | 0     | 0    | 0     | 0      | 0     | 0     | 0     | 0     | 0     | 0      | 0       |
|                               | Clover.....       | do.....            |       | 0      | 0     | 200  | 0     | 0      | 0     | 0     | 0     | 0     | 620   | 820    | 82      |
| Average.....                  |                   |                    |       | 0      | 0     | 100  | 0     | 0      | 0     | 0     | 0     | 0     | 310   | 410    | 41      |
| <b>SORGO</b>                  |                   |                    |       |        |       |      |       |        |       |       |       |       |       |        |         |
| 44.....                       | Wheat.....        | Spring plowed..... | 2,900 | 9,600  | 8,300 | 150  | 9,130 | 7,960  | 6,820 | 4,300 | 2,460 | 3,250 | 3,200 | 55,170 | 5,517   |
| 47.....                       | Corn.....         | do.....            | 3,500 | 10,800 | 6,000 | 400  | 8,630 | 11,800 | 9,260 | 3,330 | 2,850 | 3,400 | 5,800 | 62,270 | 6,227   |
| 48.....                       | Oats.....         | do.....            | 2,800 | 10,800 | 4,900 | 200  | 5,340 | 6,640  | 5,700 | 4,700 | 2,150 | 2,900 | 2,850 | 46,180 | 4,618   |
| Average.....                  |                   |                    |       | 10,400 | 6,400 | 250  | 7,700 | 8,800  | 7,260 | 4,110 | 2,487 | 3,183 | 3,950 | 54,540 | 5,454   |

<sup>3</sup> Red clover from 1906 to 1918 and sweetclover from 1919 to 1921.

## CROP YIELDS AT THE NORTH PLATTE (NEBR.) FIELD STATION

TABLE 62.—Annual acre yields of specified crops grown in rotations on individual plots at North Platte, Nebr., in one or more years from 1906 to 1926

[For descriptions of rotations, see pages 32-33. Repeated rotations or plots are designated by the suffixed letters, a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1907 to 1924, see Figure 24 (p. 36), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, and sorgo are given in pounds; all other yields are stated in bushels. An asterisk (\*) prefixed under "Winter wheat" indicates that winter wheat was winterkilled and the plot reseeded to spring wheat.]

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912  | 1913 | 1914 | 1915 | 1916 | 1917  | 1918  | 1919 | 1920 | 1921 | 1922 | 1923  | 1924 | 1925 | 1926  | Total | Average |       |      |
|-------------------------------|---------------|-------------------|------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|------|-------|------|------|-------|-------|---------|-------|------|
| WINTER WHEAT                  |               |                   |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      |       |      |      |       |       |         |       |      |
| A                             | Winter wheat  | Late fall plowed  |      |      |      |      |      |      | 7.2   | 3.2  | 3.3  | 39.7 | 23.5 | *5.0  | *4.0  | 19.8 | 21.2 | 18.5 | 4.8  | *5.7  | 16.3 | 7.2  | *0    |       | 164.7   | 11.0  |      |
| B                             | do            | Early fall plowed |      |      |      |      |      |      | 7.7   | 3.8  | 4.7  | 39.8 | 28.3 | *4.8  | *8.2  | 18.3 | 31.2 | 19.8 | 11.2 | 17.8  | 53.8 | 6.0  | *0    |       | 242.4   | 16.2  |      |
| T                             | do            | do                |      |      |      |      |      |      | 9.3   | 2.2  | 4.5  | 31.2 | 31.3 | *2.8  | *6.3  | 16.5 | 26.0 | 21.3 | 10.3 | 16.3  | 51.8 | 2.8  | *0    |       | 226.5   | 15.1  |      |
| Average                       |               |                   |      |      |      |      |      |      | 8.1   | 3.1  | 4.2  | 36.9 | 27.7 |       |       | 18.2 | 26.1 | 20.9 | 8.8  | 17.1  | 40.6 | 5.3  |       | 211.2 | 13.1    |       |      |
| C or D                        |               |                   |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      |       |      |      |       |       |         |       |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      | 14.8  | 26.8 | 9.3  | 28.0 | 30.8 | *15.5 | 12.7  | 25.3 | 27.0 | 31.0 | 23.8 | 24.7  | 57.0 | 29.7 | 4.2   |       | 348.1   | 23.2  |      |
| Winter rye                    | Winter rye    | Green manured     |      |      |      |      |      |      | 28.2  | 21.0 | 8.3  | 18.3 | 34.3 | *12.5 | 16.2  | 33.3 | 28.5 | 35.0 | 24.2 | 31.0  | 57.7 | 26.0 | *6.5  |       | 368.3   | 24.6  |      |
| Corn                          | Corn          | Disked            |      |      |      |      |      |      | 14.8  | 18.0 | 9.3  | 36.5 | 44.2 | *10.5 | 8.5   | 21.5 | 29.8 | 21.7 | 10.0 | *12.7 | 39.3 | 13.5 | *2.7  |       | 270.1   | 18.0  |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      | 13.3  | 21.5 | 14.5 | 21.9 | 27.2 | *19.7 | 16.3  | 26.3 | 31.2 | 28.2 | 18.7 | 40.3  | 58.2 | 30.0 | *18.7 |       | 376.6   | 25.1  |      |
| Corn                          | Corn          | Disked            |      |      |      |      |      |      | 11.3  | 17.0 | 11.0 | 27.3 | 34.2 | *15.3 | 8.8   | 25.8 | 26.5 | 34.2 | 15.7 | *8.5  | 56.3 | 12.7 | *0    |       | 212.6   | 16.2  |      |
| Peanut                        | Peanut        | Green manured     |      |      |      |      |      |      | 23.8  | 15.5 | 11.7 | 25.3 | 25.5 | *18.5 | 8.7   | 32.8 | 30.5 | 34.2 | 24.3 | 35.3  | 58.3 | 23.2 | *10.7 |       | 348.9   | 23.3  |      |
| Corn                          | Corn          | Disked            |      |      |      |      |      |      | 6.5   | 12.0 | 9.0  | 30.5 | 47.5 | *9.5  | 7.0   | 22.5 | 31.2 | 23.8 | 18.7 | *13.2 | 40.3 | 11.8 | *0    |       | 265.3   | 17.7  |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      | 13.2  | 33.7 | 8.7  | 29.8 | 24.5 | *13.7 | 12.5  | 22.5 | 31.3 | 20.5 | 18.7 | 30.3  | 51.7 | 30.5 | 22.8  |       | 366.0   | 24.4  |      |
| Corn                          | Corn          | Disked            |      |      |      |      |      |      | 11.8  | 20.5 | 8.7  | 38.5 | 36.2 | *9.7  | 7.3   | 23.3 | 33.5 | 20.5 | 10.3 | 12.3  | 36.8 | 10.3 | *3.3  |       | 257.8   | 17.2  |      |
| do                            | do            | do                |      |      |      |      |      |      | 14.2  | 13.5 | 4.8  | 40.0 | 42.3 | *7.7  | 5.3   | 16.3 | 27.7 | 18.0 | 5.8  | *6.3  | 21.3 | 7.0  | *0    |       | 265.1   | 17.7  |      |
| Oats                          | Oats          | Fall plowed       |      |      |      |      |      |      | *15.8 | 7.5  | 2.0  | 40.3 | 11.7 | *7.5  | 15.3  | 22.2 | 29.0 | 20.7 | 16.5 | *0.7  | 37.3 | 11.2 | *0    |       | 217.7   | 14.5  |      |
| do                            | do            | Disked            |      |      |      |      |      |      | *1.7  | 14.5 | 2.0  | 36.3 | 33.4 | *9.3  | 6.3   | 15.5 | 29.0 | 24.5 | 8.8  | *5.0  | 44.0 | 10.0 | *3.2  |       | 229.8   | 15.3  |      |
| Potatoes                      | Potatoes      | do                |      |      |      |      |      |      | 9.3   | 20.1 | 9.2  | 41.7 | 40.7 | *10.7 | 10.5  | 22.3 | 27.0 | 21.3 | 12.3 | 43.5  | 43.5 | 12.8 | *1.8  |       | 252.9   | 16.9  |      |
| do                            | do            | do                |      |      |      |      |      |      | 7.3   | 14.7 | 7.2  | 33.5 | 35.0 | *10.3 | 3.2   | 22.3 | 27.2 | 26.8 | 7.2  | *12.3 | 43.5 | 12.8 | *0    |       | 240.7   | 16.0  |      |
| do                            | do            | do                |      |      |      |      |      |      | 9.0   | 24.1 | 4.7  | 36.5 | 35.5 | *9.2  | 2.0   | 18.0 | 30.0 | 18.3 | 6.3  | *7.7  | 30.5 | 6.8  | *0    |       | 224.2   | 14.9  |      |
| do                            | do            | do                |      |      |      |      |      |      | 5.8   | 11.9 | 9.3  | 44.8 | 28.0 | *5.3  | 4.3   | 18.8 | 24.0 | 17.0 | 7.2  | *11.3 | 19.2 | 46.2 | 19.5  |       | 107.6   | 13.2  |      |
| do                            | do            | do                |      |      |      |      |      |      | 5.2   | 23.7 | 6.8  | 39.8 | 31.2 | *8.3  | 7.2   | 14.0 | 28.8 | 24.7 | 17.2 | 16.3  | 46.2 | 19.5 | *0    |       | 288.9   | 19.3  |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      | (3)   |      |      |      |      |       |       |      |      |      |      | 16.7  | 11.3 | 32.2 | 2.3   |       | 80.8    | 16.2  |      |
| Winter wheat                  | Winter wheat  | Fall plowed       |      |      |      |      |      |      | 17.0  | 12.5 | 11.2 | 39.5 | 36.2 | *13.3 | *11.0 | 25.0 | 28.5 | 34.3 | 25.0 | 28.8  | 43.7 | 22.0 | 7.0   |       | 330.7   | 22.0  |      |
| do                            | do            | do                |      |      |      |      |      |      | 1.5   | 0.6  | 3.5  | 44.8 | 13.0 | *4.5  | 5.0   | 23.3 | 32.7 | 10.7 | 11.5 | *4.2  | 17.3 | 14.3 | *0    |       | 184.2   | 12.3  |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      | 19.8  | 16.2 | 19.8 | 16.8  |       | 123.9   | 20.7  |      |
| Oats                          | Oats          | Fall plowed       |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      | 20.7  | 14.0 | 18.0 | 12.7  | *0    | 64.7    | 10.8  |      |
| Barley                        | Barley        | Disked            |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      | *11.3 | 20.0 | 12.7 | *0    |       | 123.9   | 20.7  |      |
| do                            | do            | Fall plowed       |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      | 8.0   | *6.7 | 10.2 | *0    |       | 40.9    | 6.8   |      |
| Average                       |               |                   |      |      |      |      |      |      | 10.7  | 16.6 | 8.1  | 35.4 | 31.8 | *2.0  | 7.8   | 22.9 | 29.2 | 23.2 | 11.3 | 10.7  | 36.8 | 14.2 | 1.2   |       | 228.7   | 17.0  |      |
| Check                         |               |                   |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      |       |      |      |       |       |         |       |      |
| 1                             | Winter wheat  | Fall plowed       |      |      |      |      |      |      | 14.5  | 4.2  | 5.0  | 35.0 | 23.0 | *9.7  | 8.0   | 14.5 | 20.0 | 17.7 | 12.7 | *5.5  | 22.7 | 7.7  | *0    |       | 185.0   | 12.3  |      |
| 2                             | do            | do                |      |      |      |      |      |      | 11.7  | 4.0  | 7.7  | 42.7 | 26.5 | *5.8  | 5.5   | 16.5 | 26.8 | 10.8 | 3.8  | *6.5  | 21.0 | 5.0  | *0    |       | 190.0   | 12.7  |      |
| Average                       |               |                   |      |      |      |      |      |      | 13.1  | 4.1  | 6.4  | 38.9 | 24.8 |       | 6.8   | 15.5 | 23.4 | 17.3 | 9.3  |       | 21.9 | 6.4  |       |       | 187.5   | 12.5  |      |
| SPRING WHEAT                  |               |                   |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      |       |      |      |       |       |         |       |      |
| A                             | Wheat         | Spring plowed     | 20.3 | 24.5 | 22.7 | 23.0 | 6.8  | 0    | 12.8  | 2.0  | 6.0  | 22.7 | 17.2 | 4.2   | 3.7   | 15.5 | 16.5 | 6.5  | 2.3  | 17.0  | 14.8 | 6.3  | 0     |       | 224.5   | 11.2  |      |
| B                             | do            | Fall plowed       | 22.8 | 26.0 | 27.3 | 15.3 | 6.7  | 0    | 11.2  | 1.8  | 5.2  | 22.8 | 17.5 | 5.2   | 2.2   | 13.0 | 18.8 | 10.2 | 3.3  | 20.2  | 21.5 | 4.7  | 0     |       | 232.9   | 11.6  |      |
| Average                       |               |                   |      |      |      |      |      |      |       |      |      |      |      |       |       |      |      |      |      |       |      |      |       |       |         |       |      |
| Fallow                        | Fallow        | Fallowed          |      |      |      |      |      |      | 13.1  | 1.9  | 5.6  | 22.8 | 17.4 | 4.7   | 3.0   | 14.3 | 17.7 | 8.4  | 17.3 | 8.4   | 18.6 | 18.2 | 6.5   | 0     |         | 228.7 | 11.4 |
| C or D                        |               |                   |      |      |      |      |      |      | 10.5  | 10.0 | 15.2 | 27.8 | 19.8 | 18.7  | 18.5  | 16.7 | 21.2 | 17.3 | 12.8 | 22.0  | 23.0 | 24.0 | 11.3  |       | 280.4   | 19.0  |      |
| 1                             | Corn          | Disked            | 21.0 | 22.3 | 28.7 | 21.7 | 9.5  | 0    | 5.2   | 3.2  | 4.0  | 27.2 | 19.2 | 6.8   | 4.8   | 18.0 | 19.5 | 13.5 | 4.8  | 22.2  | 18.3 | 12.7 | 0     |       | 261.6   | 13.1  |      |
| 2                             | do            | Spring plowed     | 14.8 | 23.7 | 24.0 | 17.2 | 5.2  | 0    | 5.3   | 1.5  | 5.0  | 22.3 | 17.0 | 5.8   | 4.2   | 2.2  | 16.2 | 11.5 | 1.3  | 19.7  | 15.5 | 15.0 | 0     |       | 210.4   | 10.5  |      |
| 3                             | do            | Fall plowed       | 17.5 | 20.7 | 30.0 | 24.3 | 8.3  | 0    | 8.8   | 4.3  | 6.3  | 26.0 | 19.8 | 7.2   | 4.8   | 15.0 | 18.5 | 12.5 | 7.2  | 21.5  | 19.0 | 10.2 | 0     |       | 254.4   | 13.2  |      |
| 4                             | Oats          | do                | 12.2 | 21.2 | 28.5 | 15.2 | 3.3  | 0    | 4.2   | 3.8  | 3.8  | 25.2 | 15.0 | 9.5   | 4.7   | 14.2 | 13.5 | 8.0  | 4.2  | 20.5  | 18.8 | 7.2  | 0     |       | 229.8   | 11.0  |      |
| 5                             | Fallow        | Fallowed          | 6.7  | 26.0 | 42.2 | 27.2 | 14.3 | 0    | 9.2   | 7.3  | 10.4 | 29.7 | 17.0 | 13.3  | 16.5  | 17.6 | 20.7 | 15.8 | 8.0  | 20.8  | 21.5 | 17.2 | 7.2   |       | 342.0   | 17.1  |      |
| 6                             | Oats          | Fall plowed       | 15.8 | 28.3 | 31.3 | 16.8 | 10.3 | 0    | 5.2   | 1.7  | 8.3  | 30.0 | 20.8 | 3.3   | 9.2   | 15.8 | 21.0 | 14.0 | 5.3  | 23.3  | 25.0 | 9.2  | 0     |       | 372.3   | 13.6  |      |
| 7                             | do            | Spring plowed     | 16.7 | 20.8 | 17.5 | 16.7 | 8.7  | 0    | 8.8   | 1.8  | 2.2  | 26.0 | 14.5 | 5.5   | 2.3   | 16.7 | 15.2 | 8.8  | 18.5 | 25.5  | 25.5 | 18.7 | 7.5   |       | 299.8   | 10.5  |      |
| 8                             | Corn          | Disked            | 9.0  | 25.2 | 24.7 | 16.3 | 7.5  | 0    | 2.0   | 2.8  | 4.2  | 31.0 | 18.3 | 6.2   | 3.5   | 16.7 | 15.2 | 8.8  | 2.8  | 20.8  | 12.8 | 7.8  | 0     |       | 236.1   | 11.3  |      |
| 9                             | do            | Green manured     |      |      |      |      |      |      | 14.2  | 3.2  | 4.2  | 15.8 | 18.3 | 4.5   | 3.3   | 13.5 | 17.0 | 12.2 | 32.8 | 25.5  | 25.5 | 18.7 | 7.5   |       | 252.7   | 16.8  |      |
| 10                            | Winter rye    | Disked            | 17.5 | 28.7 | 26.3 | 14.7 | 10.8 | 0    | 3.8   | 3.7  | 4.5  | 26.3 | 19.0 | 4.6   | 3.0   | 17.8 | 12.2 | 10.5 | 2.4  | 25.8  | 15.5 | 9.5  | 0     |       | 239.4   | 12.0  |      |
| 11                            | Corn          | do                |      |      |      |      |      |      | 4.8   | 1.3  | 5.0  | 23.7 | 13.7 | 6.7   | 3.5   | 16.7 | 15.2 | 13.8 | 13.5 | 14.0  | 16.3 | 13.8 | 0     |       | 147.1   | 9.8   |      |
| 12                            | do            | Fallowed          |      |      |      |      |      |      | 1.7   | 3.0  | 11.8 | 24.2 | 16.7 | 9.3   | 16.3  | 7.8  | 7.8  | 12.8 | 13.5 | 18.8  | 11.2 | 6.0  | 2.7   |       | 199.3   | 13.3  |      |
| 13                            | Fallow        | do                |      |      |      |      |      |      | 5.2   | 1.7  | 8.8  | 25.0 | 19.7 | 5.3   | 6.0   | 15.0 | 15.3 | 8.5  | 3.7  | 15.7  | 11.2 | 6.0  | 0     |       | 220.6   | 11.0  |      |
| 14                            | Corn          | Disked            | 10.3 | 23.3 | 23.7 | 16.3 | 10.2 | 0    | 7.3   | 2.5  | 4.3  | 28.0 | 20.5 | 3.8   | 4.3   | 16.7 | 19.2 | 7.8  | 3.0  | 20.8  | 14.2 | 6.2  | 0     |       | 250.4   | 11.5  |      |
| 15                            | do            | do                | 11.2 | 26.7 | 24.7 | 12.2 | 3.5  | 0    | 6.3   | 2.3  | 4.3  | 28.0 | 20.3 | 3.8   | 4.3   | 16.7 | 19.2 | 7.8  | 3.0  | 20.8  | 14.2 | 6.2  | 0     |       | 250.4   | 11.5  |      |
| 16                            | do            | do                | 12.5 | 22.5 | 23.3 | 8.2  | 2.5  | 0    | 7.3   | 2.5  | 4.3  | 28.0 | 20.3 | 3.8   | 4.3   | 16.7 | 19.2 | 7.8  | 3.0  | 20.8  | 14.2 | 6.2  | 0     |       | 250.4   | 11.5  |      |
| 17                            | do            | do                | 18.5 | 24.2 | 27.3 | 18.2 | 6.8  | 0    | 4.0   | 3.8  | 4.7  | 29.7 | 17.2 | 1.7   | 1.7   | 15.0 | 10.7 | 10.7 | 1.5  | 15.2  | 15.0 | 1.7  | 0     |       | 241.9   | 10.6  |      |
| 18                            | do            | Fall plowed       | 16.7 | 25.0 | 23.5 | 11.3 | 8.7  | 0    | 2.2   | 3.7  | 4.5  | 33.0 | 21.8 | 9.5   | 1.2   | 15.0 | 16.7 |      |      |       |      |      |       |       |         |       |      |



| No. | Crop | Condition | 1900 |  |  |  |  |  |  |  |  |  | 1901 |  |  |  |  |  |  |  |  |  | 1902 |  |  |  |  |  |  |  |  |  | 1903 |  |  |  |  |  |  |  |  |  | 1904 |  |  |  |  |  |  |  |  |  | 1905 |  |  |  |  |  |  |  |  |  | 1906 |  |  |  |  |  |  |  |  |  | 1907 |  |  |  |  |  |  |  |  |  | 1908 |  |  |  |  |  |  |  |  |  | 1909 |  |  |  |  |  |  |  |  |  | 1910 |  |  |  |  |  |  |  |  |  | 1911 |  |  |  |  |  |  |  |  |  | 1912 |  |  |  |  |  |  |  |  |  | 1913 |  |  |  |  |  |  |  |  |  | 1914 |  |  |  |  |  |  |  |  |  | 1915 |  |  |  |  |  |  |  |  |  | 1916 |  |  |  |  |  |  |  |  |  | 1917 |  |  |  |  |  |  |  |  |  | 1918 |  |  |  |  |  |  |  |  |  | 1919 |  |  |  |  |  |  |  |  |  | 1920 |  |  |  |  |  |  |  |  |  | 1921 |  |  |  |  |  |  |  |  |  | 1922 |  |  |  |  |  |  |  |  |  | 1923 |  |  |  |  |  |  |  |  |  | 1924 |  |  |  |  |  |  |  |  |  | 1925 |  |  |  |  |  |  |  |  |  | 1926 |  |  |  |  |  |  |  |  |  | 1927 |  |  |  |  |  |  |  |  |  | 1928 |  |  |  |  |  |  |  |  |  | 1929 |  |  |  |  |  |  |  |  |  | 1930 |  |  |  |  |  |  |  |  |  | 1931 |  |  |  |  |  |  |  |  |  | 1932 |  |  |  |  |  |  |  |  |  | 1933 |  |  |  |  |  |  |  |  |  | 1934 |  |  |  |  |  |  |  |  |  | 1935 |  |  |  |  |  |  |  |  |  | 1936 |  |  |  |  |  |  |  |  |  | 1937 |  |  |  |  |  |  |  |  |  | 1938 |  |  |  |  |  |  |  |  |  | 1939 |  |  |  |  |  |  |  |  |  | 1940 |  |  |  |  |  |  |  |  |  | 1941 |  |  |  |  |  |  |  |  |  | 1942 |  |  |  |  |  |  |  |  |  | 1943 |  |  |  |  |  |  |  |  |  | 1944 |  |  |  |  |  |  |  |  |  | 1945 |  |  |  |  |  |  |  |  |  | 1946 |  |  |  |  |  |  |  |  |  | 1947 |  |  |  |  |  |  |  |  |  | 1948 |  |  |  |  |  |  |  |  |  | 1949 |  |  |  |  |  |  |  |  |  | 1950 |  |  |  |  |  |  |  |  |  | 1951 |  |  |  |  |  |  |  |  |  | 1952 |  |  |  |  |  |  |  |  |  | 1953 |  |  |  |  |  |  |  |  |  | 1954 |  |  |  |  |  |  |  |  |  | 1955 |  |  |  |  |  |  |  |  |  | 1956 |  |  |  |  |  |  |  |  |  | 1957 |  |  |  |  |  |  |  |  |  | 1958 |  |  |  |  |  |  |  |  |  | 1959 |  |  |  |  |  |  |  |  |  | 1960 |  |  |  |  |  |  |  |  |  | 1961 |  |  |  |  |  |  |  |  |  | 1962 |  |  |  |  |  |  |  |  |  | 1963 |  |  |  |  |  |  |  |  |  | 1964 |  |  |  |  |  |  |  |  |  | 1965 |  |  |  |  |  |  |  |  |  | 1966 |  |  |  |  |  |  |  |  |  | 1967 |  |  |  |  |  |  |  |  |  | 1968 |  |  |  |  |  |  |  |  |  | 1969 |  |  |  |  |  |  |  |  |  | 1970 |  |  |  |  |  |  |  |  |  | 1971 |  |  |  |  |  |  |  |  |  | 1972 |  |  |  |  |  |  |  |  |  | 1973 |  |  |  |  |  |  |  |  |  | 1974 |  |  |  |  |  |  |  |  |  | 1975 |  |  |  |  |  |  |  |  |  | 1976 |  |  |  |  |  |  |  |  |  | 1977 |  |  |  |  |  |  |  |  |  | 1978 |  |  |  |  |  |  |  |  |  | 1979 |  |  |  |  |  |  |  |  |  | 1980 |  |  |  |  |  |  |  |  |  | 1981 |  |  |  |  |  |  |  |  |  | 1982 |  |  |  |  |  |  |  |  |  | 1983 |  |  |  |  |  |  |  |  |  | 1984 |  |  |  |  |  |  |  |  |  | 1985 |  |  |  |  |  |  |  |  |  | 1986 |  |  |  |  |  |  |  |  |  | 1987 |  |  |  |  |  |  |  |  |  | 1988 |  |  |  |  |  |  |  |  |  | 1989 |  |  |  |  |  |  |  |  |  | 1990 |  |  |  |  |  |  |  |  |  | 1991 |  |  |  |  |  |  |  |  |  | 1992 |  |  |  |  |  |  |  |  |  | 1993 |  |  |  |  |  |  |  |  |  | 1994 |  |  |  |  |  |  |  |  |  | 1995 |  |  |  |  |  |  |  |  |  | 1996 |  |  |  |  |  |  |  |  |  | 1997 |  |  |  |  |  |  |  |  |  | 1998 |  |  |  |  |  |  |  |  |  | 1999 |  |  |  |  |  |  |  |  |  | 2000 |  |  |  |  |  |  |  |  |  | 2001 |  |  |  |  |  |  |  |  |  | 2002 |  |  |  |  |  |  |  |  |  | 2003 |  |  |  |  |  |  |  |  |  | 2004 |  |  |  |  |  |  |  |  |  | 2005 |  |  |  |  |  |  |  |  |  | 2006 |  |  |  |  |  |  |  |  |  | 2007 |  |  |  |  |  |  |  |  |  | 2008 |  |  |  |  |  |  |  |  |  | 2009 |  |  |  |  |  |  |  |  |  | 2010 |  |  |  |  |  |  |  |  |  | 2011 |  |  |  |  |  |  |  |  |  | 2012 |  |  |  |  |  |  |  |  |  | 2013 |  |  |  |  |  |  |  |  |  | 2014 |  |  |  |  |  |  |  |  |  | 2015 |  |  |  |  |  |  |  |  |  | 2016 |  |  |  |  |  |  |  |  |  | 2017 |  |  |  |  |  |  |  |  |  | 2018 |  |  |  |  |  |  |  |  |  | 2019 |  |  |  |  |  |  |  |  |  | 2020 |  |  |  |  |  |  |  |  |  | 2021 |  |  |  |  |  |  |  |  |  | 2022 |  |  |  |  |  |  |  |  |  | 2023 |  |  |  |  |  |  |  |  |  | 2024 |  |  |  |  |  |  |  |  |  | 2025 |  |  |  |  |  |  |  |  |  | 2026 |  |  |  |  |  |  |  |  |  | 2027 |  |  |  |  |  |  |  |  |  | 2028 |  |  |  |  |  |  |  |  |  | 2029 |  |  |  |  |  |  |  |  |  | 2030 |  |  |  |  |  |  |  |  |  | 2031 |  |  |  |  |  |  |  |  |  | 2032 |  |  |  |  |  |  |  |  |  | 2033 |  |  |  |  |  |  |  |  |  | 2034 |  |  |  |  |  |  |  |  |  | 2035 |  |  |  |  |  |  |  |  |  | 2036 |  |  |  |  |  |  |  |  |  | 2037 |  |  |  |  |  |  |  |  |  | 2038 |  |  |  |  |  |  |  |  |  | 2039 |  |  |  |  |  |  |  |  |  | 2040 |  |  |  |  |  |  |  |  |  | 2041 |  |  |  |  |  |  |  |  |  | 2042 |  |  |  |  |  |  |  |  |  | 2043 |  |  |  |  |  |  |  |  |  | 2044 |  |  |  |  |  |  |  |  |  | 2045 |  |  |  |  |  |  |  |  |  | 2046 |  |  |  |  |  |  |  |  |  | 2047 |  |  |  |  |  |  |  |  |  | 2048 |  |  |  |  |  |  |  |  |  | 2049 |  |  |  |  |  |  |  |  |  | 2050 |  |  |  |  |  |  |  |  |  | 2051 |  |  |  |  |  |  |  |  |  | 2052 |  |  |  |  |  |  |  |  |  | 2053 |  |  |  |  |  |  |  |  |  | 2054 |  |  |  |  |  |  |  |  |  | 2055 |  |  |  |  |  |  |  |  |  | 2056 |  |  |  |  |  |  |  |  |  | 2057 |  |  |  |  |  |  |  |  |  | 2058 |  |  |  |  |  |  |  |  |  | 2059 |  |  |  |  |  |  |  |  |  | 2060 |  |  |  |  |  |  |  |  |  | 2061 |  |  |  |  |  |  |  |  |  | 2062 |  |  |  |  |  |  |  |  |  | 2063 |  |  |  |  |  |  |  |  |  | 2064 |  |  |  |  |  |  |  |  |  | 2065 |  |  |  |  |  |  |  |  |  | 2066 |  |  |  |  |  |  |  |  |  | 2067 |  |  |  |  |  |  |  |  |  | 2068 |  |  |  |  |  |  |  |  |  | 2069 |  |  |  |  |  |  |  |  |  | 2070 |  |  |  |  |  |  |  |  |  | 2071 |  |  |  |  |  |  |  |  |  | 2072 |  |  |  |  |  |  |  |  |  | 2073 |  |  |  |  |  |  |  |  |  | 2074 |  |  |  |  |  |  |  |  |  | 2075 |  |  |  |  |  |  |  |  |  | 2076 |  |  |  |  |  |  |  |  |  | 2077 |  |  |  |  |  |  |  |  |  | 2078 |  |  |  |  |  |  |  |  |  | 2079 |  |  |  |  |  |  |  |  |  | 2080 |  |  |  |  |  |  |  |  |  | 2081 |  |  |  |  |  |  |  |  |  | 2082 |  |  |  |  |  |  |  |  |  | 2083 |  |  |  |  |  |  |  |  |  | 2084 |  |  |  |  |  |  |  |  |  | 2085 |  |  |  |  |  |  |  |  |  | 2086 |  |  |  |  |  |  |  |  |  | 2087 |  |  |  |  |  |  |  |  |  | 2088 |  |  |  |  |  |  |  |  |  | 2089 |  |  |  |  |  |  |  |  |  | 2090 |  |  |  |  |  |  |  |  |  | 2091 |  |  |  |  |  |  |  |  |  | 2092 |  |  |  |  |  |  |  |  |  | 2093 |  |  |  |  |  |  |  |  |  | 2094 |  |  |  |  |  |  |  |  |  | 2095 |  |  |  |  |  |  |  |  |  | 2096 |  |  |  |  |  |  |  |  |  | 2097 |  |  |  |  |  |  |  |  |  | 2098 |  |  |  |  |  |  |  |  |  | 2099 |  |  |  |  |  |  |  |  |  | 2100 |  |  |  |  |  |  |  |  |  | 2101 |  |  |  |  |  |  |  |  |  | 2102 |  |  |  |  |  |  |  |  |  | 2103 |  |  |  |  |  |  |  |  |  | 2104 |  |  |  |  |  |  |  |  |  | 2105 |  |  |  |  |  |  |  |  |  | 2106 |  |  |  |  |  |  |  |  |  | 2107 |  |  |  |  |  |  |  |  |  | 2108 |  |  |  |  |  |  |  |  |  | 2109 |  |  |  |  |  |  |  |  |  | 2110 |  |  |  |  |  |  |  |  |  | 2111 |  |  |  |  |  |  |  |  |  | 2112 |  |  |  |  |  |  |  |  |  | 2113 |  |  |  |  |  |  |  |  |  | 2114 |  |  |  |  |  |  |  |  |  | 2115 |  |  |  |  |  |  |  |  |  | 2116 |  |  |  |  |  |  |  |  |  | 2117 |  |  |  |  |  |  |  |  |  | 2118 |  |  |  |  |  |  |  |  |  | 2119 |  |  |  |  |  |  |  |  |  | 2120 |  |  |  |  |  |  |  |  |  | 2121 |  |  |  |  |  |  |  |  |  | 2122 |  |  |  |  |  |  |  |  |  | 2123 |  |  |  |  |  |  |  |  |  | 2124 |  |  |  |  |  |  |  |  |  | 2125 |  |  |  |  |  |  |  |  |  | 2126 |  |  |  |  |  |  |  |  |  | 2127 |  |  |  |  |  |  |  |  |  | 2128 |  |  |  |  |  |  |  |  |  | 2129 |  |  |  |  |  |  |  |  |  | 2130 |  |  |  |  |  |  |  |  |  | 2131 |  |  |  |  |  |  |  |  |  | 2132 |  |  |  |  |  |  |  |  |  | 2133 |  |  |  |  |  |  |  |  |  | 2134 |  |  |  |  |  |  |  |  |  | 2135 |  |  |  |  |  |  |  |  |  | 2136 |  |  |  |  |  |  |  |  |  | 2137 |  |  |  |  |  |  |  |  |  | 2138 |  |  |  |  |  |  |  |  |  | 2139 |  |  |  |  |  |  |  |  |  | 2140 |  |  |  |  |  |  |  |  |  | 2141 |  |  |  |  |  |  |  |  |  | 2142 |  |  |  |  |  |  |  |  |  | 2143 |  |  |  |  |  |  |  |  |  | 2144 |  |  |  |  |  |  |  |  |  | 2145 |  |  |  |  |  |  |  |  |  | 2146 |  |  |  |  |  |  |  |  |  | 2147 |  |  |  |  |  |  |  |  |  | 2148 |  |  |  |  |  |  |  |  |  | 2149 |  |  |  |  |  |  |  |  |  | 2150 |  |  |  |  |  |  |  |  |  | 2151 |  |  |  |  |  |  |  |  |  | 2152 |  |  |  |  |  |  |  |  |  | 2153 |  |  |  |  |  |  |  |  |  | 2154 |  |  |  |  |  |  |  |  |  | 2155 |  |  |  |  |  |  |  |  |  | 2156 |  |  |  |  |  |  |  |  |  | 2157 |  |  |  |  |  |  |  |  |  | 2158 |  |  |  |  |  |  |  |  |  | 2159 |  |  |  |  |  |  |  |  |  | 2160 |  |  |  |  |  |  |  |  |  | 2161 |  |  |  |  |  |  |  |  |  | 2162 |  |  |  |  |  |  |  |  |  | 2163 |  |  |  |  |  |  |  |  |  | 2164 |  |  |  |  |  |  |  |  |  | 2165 |  |  |  |  |  |  |  |  |  | 2166 |  |  |  |  |  |  |  |  |  | 2167 |  |  |  |  |  |  |  |  |  | 2168 |  |  |  |  |  |  |  |  |  | 2169 |  |  |  |  |  |  |  |  |  | 2170 |  |  |  |  |  |  |  |  |  | 2171 |  |  |  |  |  |  |  |  |  | 2172 |  |  |  |  |  |  |  |  |  | 2173 |  |  |  |  |  |  |  |  |  | 2174 |  |  |  |  |  |  |  |  |  | 2175 |  |  |  |  |  |  |  |  |  | 2176 |  |  |  |  |  |  |  |  |  | 2177 |  |  |  |  |  |  |  |  |  | 2178 |  |  |  |  |  |  |  |  |  | 2179 |  |  |  |  |  |  |  |  |  | 2180 |  |  |  |  |  |  |  |  |  | 2181 |  |  |  |  |  |  |  |  |  | 2182 |  |  |  |  |  |  |  |  |  | 2183 |  |  |  |  |  |  |  |  |  | 2184 |  |  |  |  |  |  |  |  |  | 2185 |  |  |  |  |  |  |  |  |  | 2186 |  |  |  |  |  |  |  |  |  | 2187 |  |  |  |  |  |  |  |  |  | 2188 |  |  |  |  |  |  |  |  |  | 2189 |  |  |  |  |  |  |  |  |  | 2190 |  |  |  |  |  |  |  |  |  | 2191 |  |  |  |  |  |  |  |  |  | 2192 |  |  |  |  |  |  |  |  |  | 2193 |  |  |  |  |  |  |  |  |  | 2194 |  |  |  |  |  |  |  |  |  | 2195 |  |  |  |  |  |  |  |  |  | 2196 |  |  |  |  |  |  |  |  |  | 2197 |  |  |  |  |  |  |  |  |  | 2198 |  |  |  |  |  |  |  |  |  | 2199 |  |  |  |  |  |  |  |  |  | 2200 |  |  |  |  |  |  |  |  |  | 2201 |  |  |  |  |  |  |  |  |  | 2202 |  |  |  |  |  |  |  |  |  | 2203 |  |  |  |  |  |  |  |  |  | 2204 |  |  |  |  |  |  |  |  |  | 2205 |  |  |  |  |  |  |  |  |  | 2206 |  |  |  |  |  |  |  |  |  | 2207 |  |  |  |  |  |  |  |  |  | 2208 |  |  |  |  |  |  |  |  |  | 2209 |  |  |  |  |  |  |  |  |  | 2210 |  |  |  |  |  |  |  |  |  | 2211 |  |  |  |  |  |  |  |  |  | 2212 |  |  |  |  |  |  |  |  |  | 2213 |  |  |  |  |  |  |  |  |  | 2214 |  |  |  |  |  |  |  |  |  | 2215 |  |  |  |  |  |  |  |  |  | 2216 |  |  |  |  |  |  |  |  |  | 2217 |  |  |  |  |  |  |  |  |  | 2218 |  |  |  |  |  |  |  |  |  | 2219 |  |  |  |  |  |  |  |  |  | 2220 |  |  |  |  |  |  |  |  |  | 2221 |  |  |  |  |  |  |  |  |  | 2222 |  |  |  |  |  |  |  |  |  | 2223 |  |  |  |  |  |  |  |  |  | 2224 |  |  |  |  |  |  |  |  |  | 2225 |  |  |  |  |  |  |  |  |  | 2226 |  |  |  |  |  |  |  |  |  | 2227 |  |  |  |  |  |  |  |  |  | 2228 |  |  |  |  |  |  |  |  |  | 2229 |  |  |  |  |  |  |  |  |  | 2230 |  |  |  |  |  |  |  |  |  | 2231 |  |  |  |  |  |  |  |  |  | 2232 |  |  |  |  |  |  |  |  |  | 2233 |  |  |  |  |  |  |  |  |  | 2234 |  |  |  |  |  |  |  |  |  | 2235 |  |  |  |  |  |  |  |  |  | 2236 |  |  |  |  |  |  |  |  |  | 2237 |  |  |  |  |  |  |  |  |  | 2238 |  |  |  |  |  |  |  |  |  | 2239 |  |  |  |  |  |  |  |  |  | 2240 |  |  |  |  |  |  |  |  |  | 2241 |  |  |  |  |  |  |  |  |  | 2242 |  |  |  |  |  |  |  |  |  | 2243 |  |  |  |  |  |  |  |  |  | 2244 |  |  |  |  |  |  |  |  |  | 2245 |  |  |  |  |  |  |  |  |  | 2246 |  |  |  |  |  |  |  |  |  | 2247 |  |  |  |  |  |  |  |  |  | 2248 |  |  |  |  |  |  |  |  |  | 2249 |  |  |  |  |  |  |  |  |  | 2250 |  |  |  |  |  |  |  |  |  | 2251 |  |  |  |  |  |  |  |  |  | 2252 |  |  |  |  |  |  |  |  |  | 2253 |  |  |  |  |  |  |  |  |  | 2254 |  |  |  |  |  |  |  |  |  | 2255 |  |  |  |  |  |  |  |  |  | 2256 |  |  |  |  |  |  |  |  |  | 2257 |  |  |  |  |  |  |  |  |  | 2258 |  |  |  |  |  |  |  |  |  | 2259 |  |  |  |  |  |  |  |  |  | 2260 |  |  |  |  |  |  |  |  |  | 2261 |  |  |  |  |  |  |  |  |  | 2262 |  |  |  |  |  |  |  |  |  | 2263 |  |  |  |  |  |  |  |  |  | 2264 |  |  |  |  |  |  |  |  |  | 2265 |  |  |  |  |  |  |  |  |  | 2266 |  |  |  |  |  |  |  |  |  | 2267 |  |  |  |  |  |  |  |  |  | 2268 |  |  |  |  |  |  |  |  |  | 2269 |  |  |  |  |  |  |  |  |  | 2270 |  |  |  |  |  |  |  |  |  | 2271 |  |  |  |  |  |  |  |  |  | 2272 |  |  |  |  |  |  |  |  |  | 2273 |  |  |  |  |  |  |  |  |  | 2274 |  |  |  |  |  |  |  |  |  | 2275 |  |  |  |  |  |  |  |  |  | 2276 |  |  |  |  |  |  |  |  |  | 2277 |  |  |  |  |  |  |  |  |  | 2278 |  |  |  |  |  |  |  |  |  | 2279 |  |  |  |  |  |  |  |  |  | 2280 |  |  |  |  |  |  |  |  |  | 2281 |  |  |  |  |  |  |  |  |  | 2282 |  |  |  |  |  |  |  |  |  | 2283 |  |  |  |  |  |  |  |  |  | 2284 |  |  |  |  |  |  |  |  |  | 2285 |  |  |  |  |  |  |  |  |  | 2286 |  |  |  |  |  |  |  |  |  | 2287 |  |  |  |  |  |  |  |  |  | 2288 |  |  |  |  |  |  |  |  |  | 2289 |  |  |  |  |  |  |  |  |  | 2290 |  |  |  |  |  |  |  |  |  | 2291 |  |  |  |  |  |  |  |  |  | 2292 |  |  |  |  |  |  |  |  |  | 2293 |  |  |  |  |  |  |  |  |  | 2294 |  |  |  |  |  |  |  |  |  | 2295 |  |  |  |  |  |  |  |  |  | 2296 |  |  |  |  |  |  |  |  |  | 2297 |  |  |  |  |  |  |  |  |  | 2298 |  |  |  |  |  |  |  |  |  | 2299 |  |  |  |  |  |  |  |  |  | 2300 |  |  |  |  |  |  |  |  |  | 2301 |  |  |  |  |  |  |  |  |  | 2302 |  |  |  |  |  |  |  |  |  | 2303 |  |  |  |  |  |  |  |  |  | 2304 |  |  |  |  |  |  |  |  |  | 2305 |  |  |  |  |  |  |  |  |  | 2306 |  |  |  |  |  |  |  |  |  | 2307 |  |  |  |  |  |  |  |  |  | 2308 |  |  |  |  |  |  |  |  |  | 2309 |  |  |  |  |  |  |  |  |  | 2310 |  |  |  |  |  |  |  |  |  | 2311 |  |  |  |  |  |  |  |  |  | 2312 |  |  |  |  |  |  |  |  |  | 2313 |  |  |  |  |  |  |  |  |  | 2314 |  |  |  |  |  |  |  |  |  | 2315 |  |  |  |  |  |  |  |  |  | 2316 |  |  |  |  |  |  |  |  |  | 2317 |  |  |  |  |  |  |  |  |  | 2318 |  |  |  |  |  |  |  |  |  | 2319 |  |  |  |  |  |  |  |  |  | 2320 |  |  |  |  |  |  |  |  |  | 2321 |  |  |  |  |  |  |  |  |  | 2322 |  |  |  |  |  |  |  |  |  | 2323 |  |  |  |  |  |  |  |  |  | 2324 |  |  |  |  |  |  |  |  |  | 2325 |  |  |  |  |  |  |  |  |  | 2326 |  |  |  |  |  |  |  |  |  | 2327 |  |  |  |  |  |  |  |  |  | 2328 |  |  |  |  |  |  |  |  |  | 2329 |  |  |  |  |  |  |  |  |  | 2330 |  |  |  |  |  |  |  |  |  | 2331 |  |  |  |  |  |  |  |  |  | 2332 |  |  |  |  |  |  |  |  |  | 2333 |  |  |  |  |  |  |  |  |  | 2334 |  |  |  |  |  |  |  |  |  | 2335 |  |  |  |  |  |  |  |  |  | 2336 |  |  |  |  |  |  |  |  |  | 2337 |  |  |  |  |  |  |  |  |  | 2338 |  |  |  |  |  |  |  |  |  | 2339 |  |  |  |  |  |  |  |  |  | 2340 |  |  |  |  |  |  |  |  |  | 2341 |  |  |  |  |  |  |  |  |  | 2342 |  |  |  |  |  |  |  |  |  | 2343 |  |  |  |  |  |  |  |  |  | 2344 |  |  |  |  |  |  |  |  |  | 2345 |  |  |  |  |  |  |  |  |  | 2346 |  |  |  |  |  |  |  |  |  | 2347 |  |  |  |  |  |  |  |  |  | 2348 |  |  |  |  |  |  |  |  |  | 2349 |  |  |  |  |  |  |  |  |  | 2350 |  |  |  |  |  |  |  |  |  | 2351 |  |  |  |  |  |  |  |  |  | 2352 |  |  |  |  |  |  |  |  |  | 2353 |  |  |  |  |  |  |  |  |  | 2354 |  |  |  |  |  |  |  |  |  | 2355 |  |  |  |  |  |  |  |  |  | 2356 |  |  |  |  |  |  |  |  |  | 2357 |  |  |  |  |  |  |  |  |  | 2358 |  |  |  |  |  |  |  |  |  | 2359 |  |  |  |  |  |  |  |  |  | 2360 |  |  |  |  |  |  |  |  |  | 2361 |  |  |  |  |  |  |  |  |  | 2362 |  |  |  |  |  |  |  |  |  | 2363 |  |  |  |  |  |  |  |  |  | 2364 |  |  |  |  |  |  |  |  |  | 2365 |  |  |  |  |  |  |  |  |  | 2366 |  |  |  |  |  |  |  |  |  | 2367 |  |  |  |  |  |  |  |  |  | 2368 |  |  |  |  |  |  |  |  |  | 2369 |  |  |  |  |  |  |  |  |  | 2370 |  |  |  |  |  |  |  |  |  | 2371 |  |  |  |  |  |  |  |  |  | 2372 |  |  |  |  |  |  |  |  |  | 2373 |  |  |  |  |  |  |  |  |  | 2374 |  |  |  |  |  |  |  |  |  | 2375 |  |  |  |  |  |  |  |  |  | 2376 |  |  |  |  |  |  |  |  |  | 2377 |  |  |  |  |  |  |  |  |  | 2378 |  |  |  |  |  |  |  |  |  | 2379 |  |  |  |  |  |  |  |  |  | 2380 |  |  |  |  |  |  |  |  |  | 2381 |  |  |  |  |  |  |  |  |  | 2382 |  |  |  |  |  |  |  |  |  | 2383 |  |  |  |  |  |  |  |  |  | 2384 |  |  |  |  |  |  |  |  |  | 2385 |  |  |  |  |  |  |  |  |  | 2386 |  |  |  |  |  |  |  |  |  | 2387 |  |  |  |  |  |  |  |  |  | 2388 |  |  |  |  |  |  |  |  |  | 2389 |  |  |  |  |  |  |  |  |  | 2390 |  |  |  |  |  |  |  |  |  | 2391 |  |  |  |  |  |  |  |  |  | 2392 |  |  |  |  |  |  |  |  |  | 2393 |  |  |  |  |  |  |  |  |  | 2394 |  |  |  |  |  |  |  |  |  | 2395 |  |  |  |  |  |  |  |  |  | 2396 |  |  |  |  |  |  |  |  |  | 2397 |  |  |  |  |  |  |  |  |  | 2398 |  |  |  |  |  |  |  |  |  | 2399 |  |  |  |  |  |  |  |  |  | 2400 |  |  |  |  |  |  |  |  |  | 2401 |  |  |  |  |  |  |  |  |  | 2402 |  |  |  |  |  |  |  |  |  | 2403 |  |  |  |  |  |  |  |  |  | 2404 |  |  |  |  |  |  |  |  |  | 2405 |  |  |  |  |  |  |  |  |  | 2406 |  |  |  |  |  |  |  |  |  | 2407 |  |  |  |  |  |  |  |  |  | 2408 |  |  |  |  |  |  |  |  |  | 2409 |  |  |  |  |  |  |  |  |  | 2410 |  |  |  |  |  |  |  |  |  | 2411 |  |  |  |  |  |  |  |  |  | 2412 |  |  |  |  |  |  |  |  |  | 2413 |  |  |  |  |  |  |  |  |  | 2414 |  |  |  |  |  |  |  |  |  | 2415 |  |  |  |  |  |  |  |  |  | 2416 |  |  |  |  |  |  |  |  |  | 2417 |  |  |  |  |  |  |  |  |  | 2418 |  |  |  |  |  |  |  |  |  | 2419 |  |  |  |  |  |  |  |  |  | 2420 |  |  |  |  |  |  |  |  |  | 2421 |  |  |  |  |  |  |  |  |  | 2422 |  |  |  |  |  |  |  |  |  | 2423 |  |  |  |  |  |  |  |  |  | 2424 |  |  |  |  |  |  |  |  |  | 2425 |  |  |  |  |  |  |  |  |  | 2426 |  |  |  |  |  |  |  |  |  | 2427 |  |  |  |  |  |  |  |  |  | 2428 |  |  |  |  |  |  |  |  |  | 2429 |  |  |  |  |  |  |  |  |  | 2430 |  |  |  |  |  |  |  |  |  | 2431 |  |  |  |  |  |  |  |  |  | 2432 |  |  |  |  |  |  |  |  |  | 2433 |  |  |  |  |  |  |  |  |  | 2434 |  |  |  |  |  |  |  |  |  | 2435 |  |  |  |  |  |  |  |  |  | 2436 |  |  |  |  |  |  |  |  |  | 2437 |  |  |  |  |  |  |  |  |  | 2438 |  |  |  |  |  |  |  |  |  | 2439 |  |  |  |  |  |  |  |  |  | 2440 |  |  |  |  |  |  |  |  |  | 2441 |  |  |  |  |  |  |  |  |  | 2442 |  |  |  |  |  |  |  |  |  | 2443 |  |  |  |  |  |  |  |  |  | 2444 |  |  |  |  |  |  |  |  |  | 2445 |  |  |  |  |  |  |  |  |  | 2446 |  |  |  |  |  |  |  |  |  | 2447 |  |  |  |  |  |  |  |  |  | 2448 |  |  |  |  |  |  |  |  |  | 2449 |  |  |  |  |  |  |  |  |  | 2450 |  |  |  |  |  |  |  |  |  | 2451 |  |  |  |  |  |  |  |  |  | 2452 |  |  |  |  |  |  |  |  |  | 2453 |  |  |  |  |  |  |  |  |  | 2454 |  |  |  |  |  |  |  |  |  | 2455 |  |  |  |  |  |  |  |  |  | 2456 |  |  |  |  |  |  |  |  |  | 2457 |  |  |  |  |  |  |  |  |  | 2458 |  |  |  |  |  |  |  |  |  | 2459 |  |  |  |  |  |  |  |  |  | 2460 |  |  |  |  |  |  |  |  |  | 2461 |  |  |  |  |  |  |  |  |  | 2462 |  |  |  |  |  |  |  |  |  | 2463 |  |  |  |  |  |  |  |  |  | 2464 |  |  |  |  |  |  |  |  |  | 2465 |  |  |  |  |  |  |  |  |  | 2466 |  |  |  |  |  |  |  |  |  | 2467 |  |  |  |  |  |  |  |  |  | 2468 |  |  |  |  |  |  |  |  |  | 2469 |  |  |  |  |  |  |  |  |  | 2470 |  |  |  |  |  |  |  |  |  | 2471 |  |  |  |  |  |  |  |  |  | 2472 |  |  |  |  |  |  |  |  |  | 2473 |  |  |  |  |  |  |  |  |  | 2474 |  |  |  |  |  |  |  |  |  | 2475 |  |  |  |  |  |  |  |  |  | 2476 |  |  |  |  |  |  |  |  |  | 2477 |  |  |  |  |  |  |  |  |  | 2478 |  |  |  |  |  |  |  |  |  | 2479 |  |  |  |  |  |  |  |  |  | 2480 |  |  |  |  |  |  |  |  |  | 2481 |  |  |  |  |  |  |  |  |  | 2482 |  |  |  |  |  |  |  |  |  | 2483 |  |  |  |  |  |  |  |  |  | 2484 |  |  |  |  |  |  |  |  |  | 2485 |  |  |  |  |  |  |  |  |  | 2486 |  |  |  |  |  |  |  |  |  | 2487 |  |  |  |  |  |  |  |  |  | 2488 |  |  |  |  |  |  |  |  |  | 2489 |  |  |  |  |  |  |  |  |  | 2490 |  |  |  |  |  |  |  |  |  | 2491 |  |  |  |  |  |  |  |  |  | 2492 |  |  |  |  |  |  |  |  |  | 2493 |  |  |  |  |  |  |  |  |  | 2494 |  |  |  |  |  |  |  |  |  | 2495 |  |  |  |  |  |  |  |  |  | 2496 |  |  |  |  |  |  |  |  |  | 2497 |  |  |  |  |  |  |  |  |  | 2498 |  |  |  |  |  |  |  |  |  | 2499 |  |  |  |  |  |  |  |  |  | 2500 |  |  |  |  |  |  |  |  |  | 2501 |  |  |  |  |  |  |  |  |  | 2502 |  |  |  |  |  |  |  |  |  | 2503 |  |  |  |  |  |  |  |  |  | 2504 |  |  |  |  |  |  |  |  |  | 2505 |  |  |  |  |  |  |  |  |  | 2506 |  |  |  |  |  |  |  |  |  | 2507 |  |  |  |  |  |  |  |  |  | 2508 |  |  |  |  |  |  |  |  |  | 2509 |  |  |  |  |  |  |  |  |  | 2510 |  |  |  |  |  |  |  |  |  | 2511 |  |  |  |  |  |  |  |  |  | 2512 |  |  |  |  |  |  |  |  |  | 2513 |  |  |  |  |  |  |  |  |  | 2514 |  |  |  |  |  |  |  |  |  | 2515 |  |  |  |  |  |  |  |  |  | 2516 |  |  |  |  |  |  |  |  |  | 2517 |  |  |  |  |  |  |  |  |  | 2518 |  |  |  |  |  |  |  |  |  | 2519 |  |  |  |  |  |  |  |  |  | 2520 |  |  |  |  |  |  |  |  |  | 2521 |  |  |  |  |  |  |  |  |  | 2522 |  |  |  |  |  |  |  |  |  | 2523 |  |  |  |  |  |  |  |  |  | 2524 |  |  |  |  |  |  |  |  |  | 2525 |  |  |  |  |  |  |  |  |  | 2526 |  |  |  |  |  |  |  |  |  | 2527 |  |  |  |  |  |  |  |  |  | 2528 |  |  |  |  |  |  |  |  |  | 2529 |  |  |  |  |  |  |  |  |  | 2530 |  |  |  |  |  |  |  |  |  | 2531 |  |  |  |  |  |  |  |  |  | 2532 |  |  |  |  |  |  |  |  |  | 2533 |  |  |  |  |  |  |  |  |  | 2534 |  |  |  |  |  |  |  |  |  | 2535 |  |  |  |  |  |  |  |  |  | 2536 |  |  |  |  |  |  |  |  |  | 2537 |  |  |  |  |  |  |  |  |  | 2538 |  |  |  |  |  |  |  |  |  | 2539 |  |  |  |  |  |  |  |  |  | 2540 |  |  |  |  |  |  |  |  |  | 2541 |  |  |  |  |  |  |  |  |  | 2542 |  |  |  |  |  |  |  |  |  | 2543 |  |  |  |  |  |  |  |  |  | 2544 |  |  |  |  |  |  |  |  |  | 2545 |  |  |  |  |  |  |  |  |  | 2546 |  |  |  |  |  |  |  |  |  | 2547 |  |  |  |  |  |  |  |  |  | 2548 |  |  |  |  |  |  |  |  |  | 2549 |  |  |  |  |  |  |  |  |  | 2550 |  |  |  |  |  |  |  |  |  | 2551 |  |  |  |  |  |  |  |  |  | 2552 |  |  |  |  |  |  |  |  |  | 2553 |  |  |  |  |  |  |  |  |  | 2554 |  |  |  |  |  |  |  |  |  | 2555 |  |  |  |  |  |  |  |  |  | 2556 |  |  |  |  |  |  |  |  |  | 2557 |  |  |  |  |  |  |  |  |  | 2558 |  |  |  |  |  |  |  |  |  | 2559 |  |  |  |  |  |  |  |  |  | 2560 |  |  |  |  |  |  |  |  |  | 2561 |  |  |  |  |  |  |  |  |  | 2562 |  |  |  |  |  |  |  |  |  | 2563 |  |  |  |  |  |  |  |  |  | 2564 |  |  |  |  |  |  |  |  |  | 2565 |  |  |  |  |  |  |  |  |  | 2566 |  |  |  |  |  |  |  |  |  | 2567 |  |  |  |  |  |  |  |  |  | 2568 |  |  |  |  |  |  |  |  |  | 2569 |  |  |  |  |  |  |  |  |  | 2570 |  |  |  |  |  |  |  |  |  | 2571 |  |  |  |  |  |  |  |  |  | 2572 |  |  |  |  |  |  |  |  |  | 2573 |  |  |  |  |  |  |  |  |  | 2574 |  |  |  |  |  |  |  |  |  | 2575 |  |  |  |  |  |  |  |  |  | 2576 |  |  |  |  |  |  |  |  |  | 2577 |  |  |  |  |  |  |  |  |  | 2578 |  |  |  |  |  |  |  |  |  | 2579 |  |  |  |  |  |  |  |  |  | 2580 |  |  |  |  |  |  |  |  |  | 2581 |  |  |  |  |  |  |  |  |  | 2582 |  |  |  |  |  |  |  |  |  | 2583 |  |  |  |  |  |  |  |  |  | 2584 |  |  |  |  |  |  |  |  |  | 2585 |  |  |  |  |  |  |  |  |  | 2586 |  |  |  |  |  |  |  |  |  | 2587 |  |  |  |  |  |  |  |  |  | 2588 |  |  |  |  |  |  |  |  |  | 2589 |  |  |  |  |  |  |  |  |  | 2590 |  |  |  |  |  |  |  |  |  | 2591 |  |  |  |  |  |  |  |  |  | 2592 |  |  |  |  |  |  |  |  |  | 2593 |  |  |  |  |  |  |  |  |  | 2594 |  |  |  |  |  |  |  |  |  | 2595 |  |  |  |  |  |  |  |  |  | 2596 |  |  |  |  |  |  |  |  |  | 2597 |  |  |  |  |  |  |  |  |  | 2598 |  |  |  |  |  |  |  |  |  | 2599 |  |  |  |  |  |  |  |  |  | 2600 |  |  |  |  |  |  |  |  |  | 2601 |  |  |  |  |  |  |  |  |  | 2602 |  |  |  |  |  |  |  |  |  | 2603 |  |  |  |  |  |  |  |  |  | 2604 |  |  |  |  |  |  |  |  |  | 2605 |  |  |  |  |  |  |  |  |  | 2606 |  |  |  |  |  |  |  |  |  | 2607 |  |  |  |  |  |  |  |  |  | 2608 |  |  |  |  |  |  |  |  |  | 2609 |  |  |  |  |  |  |  |  |  | 2610 |  |  |  |  |  |  |  |  |  | 2611 |  |  |  |  |  |  |  |  |  | 2612 |  |  |  |  |  |  |  |  |  | 2613 |  |  |  |  |  |  |  |  |  | 2614 |  |  |  |  |  |  |  |  |  | 2615 |  |  |  |  |  |  |  |  |  | 2616 |  |  |  |  |  |  |  |  |  | 2617 |  |  |  |  |  |  |  |  |  | 2618 |  |  |  |  |  |  |  |  |  | 2619 |  |  |  |  |  |  |  |  |  | 2620 |  |  |  |  |  |  |  |  |  | 2621 |  |  |  |  |  |  |  |  |  | 2622 |  |  |  |  |  |  |  |  |  | 2623 |  |  |  |  |  |  |  |  |  | 2624 |  |  |  |  |  |  |  |  |  | 2625 |  |  |  |  |  |  |  |  |  | 2626 |  |  |  |  |  |  |  |  |  | 2627 |  |  |  |  |  |  |  |  |  | 2628 |  |  |  |  |  |  |  |  |  | 2629 |  |  |  |  |  |  |  |  |  | 2630 |  |  |  |  |  |  |  |  |  | 2631 |  |  |  |  |  |  |  |  |  | 2632 |  |  |  |  |  |  |  |  |  | 2633 |  |  |  |  |  |  |  |  |  | 2634 |  |  |  |  |  |  |  |  |  | 2635 |  |  |  |  |  |  |  |  |  | 2636 |  |  |  |  |  |  |  |  |  | 2637 |  |  |  |  |  |  |  |  |  | 2638 |  |  |  |  |  |  |  |  |  | 2639 |  |  |  |  |  |  |  |  |  | 2640 |  |  |  |  |  |  |  |  |  | 2641 |  |  |  |  |  |  |  |  |  | 2642 |  |  |  |  |  |  |  |  |  | 2643 |  |  |  |  |  |  |  |  |  | 2644 |  |  |  |  |  |  |  |  |  | 2645 |  |  |  |  |  |  |  |  |  | 2646 |  |  |  |  |  |  |  |  |  | 2647 |  |  |  |  |  |  |  |  |  | 2648 |  |  |  |  |  |  |  |  |  | 2649 |  |  |  |  |  |  |  |  |  | 2650 |  |  |  |  |  |  |  |  |  | 2651 |  |  |  |  |  |  |  |  |  | 2652 |  |  |  |  |  |  |  |  |  | 2653 |  |  |  |  |  |  |  |  |  | 2654 |  |  |  |  |  |  |  |  |  | 2655 |  |  |  |  |  |  |  |  |  | 2656 |  |  |  |  |  |  |  |  |  | 2657 |  |  |  |  |  |  |  |  |  | 2658 |  |  |  |  |  |  |  |  |  | 2659 |  |  |  |  |  |  |  |  |  | 2660 |  |  |  |  |  |  |  |  |  | 2661 |  |  |  |  |  |  |  |  |  | 2662 |  |  |  |  |  |  |  |  |  | 2663 |  |  |  |  |  |  |  |  |  | 2664 |  |  |  |  |  |  |  |  |  | 2665 |  |  |  |  |  |  |  |  |  | 2666 |  |  |  |  |  |  |  |  |  | 2667 |  |  |  |  |  |  |  |  |  | 2668 |  |  |  |  |  |  |  |  |  | 2669 |  |  |  |  |  |  |  |  |  | 2670 |  |  |  |  |  |  |  |  |  | 2671 |  |  |  |  |  |  |  |  |  | 2672 |  |  |  |  |  |  |  |  |  | 2673 |  |  |  |  |  |  |  |  |  | 2674 |  |  |  |  |  |  |  |  |  | 2675 |  |  |  |  |  |  |  |  |  | 2676 |  |  |  |  |  |  |  |  |  | 2677 |  |  |  |  |  |  |  |  |  | 2678 |  |  |  |  |  |  |  |  |  | 2679 |  |  |  |  |  |  |  |  |  | 2680 |  |  |  |  |  |  |  |  |  | 2681 |  |  |  |  |  |  |  |  |  | 2682 |  |  |  |  |  |  |  |  |  | 2683 |  |  |  |  |  |  |  |  |  | 2684 |  |  |  |  |  |  |  |  |  | 2685 |  |  |  |  |  |  |  |  |  | 2686 |  |  |  |  |  |  |  |  |  | 2687 |  |  |  |  |  |  |  |  |  | 2688 |  |  |  |  |  |  |  |  |  | 2689 |  |  |  |  |  |  |  |  |  | 2690 |  |  |  |  |  |  |  |  |  | 2691 |  |  |  |  |  |  |  |  |  | 2692 |  |  |  |  |  |  |  |  |  | 2693 |  |  |  |  |  |  |  |  |  | 2694 |  |  |  |  |  |  |  |  |  | 2695 |  |  |  |  |  |  |  |  |  | 2696 |  |  |  |  |  |  |  |  |  | 2697 |  |  |  |  |  |  |  |  |  | 2698 |  |  |  |  |  |  |  |  |  | 2699 |  |  |  |  |  |  |  |  |  | 2700 |  |  |  |  |  |  |  |  |  | 2701 |  |  |  |  |  |  |  |  |  | 2702 |  |  |  |  |  |  |  |  |  | 2703 |  |  |  |  |  |  |  |  |  | 2704 |  |  |  |  |  |  |  |  |  | 2705 |  |  |  |  |  |  |  |  |  | 2706 |  |  |  |  |  |  |  |  |  | 2707 |  |  |  |  |  |  |  |  |  | 2708 |  |  |  |  |  |  |  |  |  | 2709 |  |  |  |  |  |  |  |  |  | 2710 |  |  |  |  |  |  |  |  |  | 2711 |  |  |  |  |  |  |  |  |  | 2712 |  |  |  |  |  |  |  |  |  | 2713 |  |  |  |  |  |  |  |  |  | 2714 |  |  |  |  |  |  |  |  |  | 2715 |  |  |  |  |  |  |  |  |  | 2716 |  |  |  |  |  |  |  |  |  | 2717 |  |  |  |  |  |  |  |  |  | 2718 |  |  |  |  |  |  |  |  |  | 2719 |  |  |  |  |  |  |  |  |  | 2720 |  |  |  |  |  |  |  |  |  | 2721 |  |  |  |  |  |  |  |  |  | 2722 |  |  |  |  |  |  |  |  |  | 2723 |  |  |  |  |  |  |  |  |  | 2724 |  |  |  |  |  |  |  |  |  | 2725 |  |  |  |  |  |  |  |  |  | 2726 |  |  |  |  |  |  |  |  |  | 2727 |  |  |  |  |  |  |  |  |  | 2728 |  |  |  |  |  |  |  |  |  | 2729 |  |  |  |  |  |  |  |  |  | 2730 |  |  |  |  |  |  |  |  |  | 2731 |  |  |  |  |  |  |  |  |  | 2732 |  |  |  |  |  |  |  |  |  | 2733 |  |  |  |  |  |  |  |  |  | 2734 |  |  |  |  |  |  |  |  |  | 2735 |  |  |  |  |  |  |  |  |  | 2736 |  |  |  |  |  |  |  |  |  | 2737 |  |  |  |  |  |  |  |  |  | 2738 |  |  |  |  |  |  |  |  |  | 2739 |  |  |  |  |  |  |  |  |  | 2740 |  |  |  |  |  |  |  |  |  | 2741 |  |  |  |  |  |  |  |  |  | 2742 |  |  |  |  |  |  |  |  |  | 2743 |  |  |  |  |  |  |  |  |  | 2744 |  |  |  |  |  |  |  |  |  | 2745 |  |  |  |  |  |  |  |  |  | 2746 |  |  |  |  |  |  |  |  |  | 2747 |  |  |  |  |  |  |  |  |  | 2748 |  |  |  |  |  |  |  |  |  | 2749 |  |  |  |  |  |  |  |  |  | 2750 |  |  |  |  |  |  |  |  |  | 2751 |  |  |  |  |  |  |  |  |  | 2752 |  |  |  |  |  |  |  |  |  | 2753 |  |  |  |  |  |  |  |  |  | 2754 |  |  |  |  |  |  |  |  |  | 2755 |  |  |  |  |  |  |  |  |  | 2756 |  |  |  |  |  |  |  |  |  | 2757 |  |  |  |  |  |  |  |  |  | 2758 |  |  |  |  |  |  |  |  |  | 2759 |  |  |  |  |  |  |  |  |  | 2760 |  |  |  |  |  |  |  |  |  | 2761 |  |  |  |  |  |  |  |  |  | 2762 |  |  |  |  |  |  |  |  |  | 2763 |  |  |  |  |  |  |  |  |  | 2764 |  |  |  |  |  |  |  |  |  | 2765 |  |  |  |  |  |  |  |  |  | 2766 |  |  |  |  |  |  |  |  |  | 2767 |  |  |  |  |  |  |  |  |  | 2768 |  |  |  |  |  |  |  |  |  | 2769 |  |  |  |  |  |  |  |  |  | 2770 |  |  |  |  |  |  |  |  |  | 2771 |  |  |  |  |  |  |  |  |  | 2772 |  |  |  |  |  |  |  |  |  | 2773 |  |  |  |  |  |  |  |  |  | 2774 |  |  |  |  |  |  |  |  |  | 2775 |  |  |  |  |  |  |  |  |  | 2776 |  |  |  |  |  |  |  |  |  | 2777 |  |  |  |  |  |  |  |  |  | 2778 |  |  |  |  |  |  |  |  |  | 2779 |  |  |  |  |  |  |  |  |  | 2780 |  |  |  |  |  |  |  |  |  | 2781 |  |  |  |  |  |  |  |  |  | 2782 |  |  |  |  |  |  |  |  |  | 2783 |  |  |  |  |  |  |  |  |  | 2784 |  |  |  |  |  |  |  |  |  | 2785 |  |  |  |  |  |  |  |  |  | 2786 |  |  |  |  |  |  |  |  |  | 2787 |  |  |  |  |  |  |  |  |  | 2788 |  |  |  |  |  |  |  |  |  | 2789 |  |  |  |  |  |  |  |  |  | 2790 |  |  |  |  |  |  |  |  |  | 2791 |  |  |  |  |  |  |  |  |  | 2792 |  |  |  |  |  |  |  |  |  | 2793 |  |  |  |  |  |  |  |  |  | 2794 |  |  |  |  |  |  |  |  |  | 2795 |  |  |  |  |  |  |  |  |  | 2796 |  |  |  |  |  |  |  |  |  | 2797 |  |  |  |  |  |  |  |  |  | 2798 |  |  |  |  |  |  |  |  |  | 2799 |  |  |  |  |  |  |  |  |  | 2800 |  |  |  |  |  |  |  |  |  | 2801 |  |  |  |  |  |  |  |  |  | 2802 |  |  |  |  |  |  |  |  |  | 2803 |  |  |  |  |  |  |  |  |  | 2804 |  |  |  |  |  |  |  |  |  | 2805 |  |  |  |  |  |  |  |  |  | 2806 |  |  |  |  |  |  |  |  |  | 2807 |  |  |  |  |  |  |  |  |  | 2808 |  |  |  |  |  |  |  |  |  | 2809 |  |  |  |  |  |  |  |  |  | 2810 |  |  |  |  |  |  |  |  |  | 2811 |  |  |  |  |  |  |  |  |  | 2812 |  |  |  |  |  |  |  |  |  | 2813 |  |  |  |  |  |  |  |  |  | 2814 |  |  |  |  |  |  |  |  |  | 2815 |  |  |  |  |  |  |  |  |  | 2816 |  |  |  |  |  |  |  |  |  | 2817 |  |  |  |  |  |  |  |  |  | 2818 |  |  |  |  |  |  |  |  |  | 2819 |  |  |  |  |  |  |  |  |  | 2820 |  |  |  |  |  |  |  |  |  | 2821 |  |  |  |  |  |  |  |  |  | 2822 |  |  |  |  |  |  |  |  |  | 2823 |  |  |  |  |  |  |  |  |  | 2824 |  |  |  |  |  |  |  |  |  | 2825 |  |  |  |  |  |  |  |  |  | 2826 |  |  |  |  |  |  |  |  |  | 2827 |  |  |  |  |  |  |  |  |  | 2828 |  |  |  |  |  |  |  |  |  | 2829 |  |  |  |  |  |  |  |  |  | 2830 |  |  |  |  |  |  |  |  |  | 2831 |  |  |  |  |  |  |  |  |  | 2832 |  |  |  |  |  |  |  |  |  | 2833 |  |  |  |  |  |  |  |  |  | 2834 |  |  |  |  |  |  |  |  |  | 2835 |  |  |  |  |  |  |  |  |  | 2836 |  |  |  |  |  |  |  |  |  | 2837 |  |  |  |  |  |  |  |  |  | 2838 |  |  |  |  |  |  |  |  |  | 2839 |  |  |  |  |  |  |  |  |  | 2840 |  |  |  |  |  |  |  |  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The corn in rotation 111 is thinned to one-half stand

2 Beginning in 1912, continuously followed for 10 years.

<sup>a</sup> Beginning in 1912, continuously cropped to winter rye for green manure for 10 years.

- 4 Seeded so late that no yield was obtained.
- 5 Low yield due to poor stand caused by serious washing.

<sup>6</sup> Crops grown but yields not recorded.



## CROP YIELDS AT THE NORTH PLATTE (NEBR.) FIELD STATION—Continued

TABLE 62.—Annual acre yields of specified crops grown in rotations on individual plots at North Platte, Nebr., in one or more years from 1906 to 1926—Continued

| Crop and rotation No. or plot |        | Previous crop | Tillage method |       | 1906  | 1907  | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926   | Total | Average |
|-------------------------------|--------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|---------|
| CORN TOTAL—CON.               |        |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |       |         |
| 42                            | Oats   | do            | Spring plowed  | 6,120 | 0,050 | 4,700 | 5,050 | 1,730 | 780   | 3,700 | 1,670 | 1,150 | 5,000 | 1,280 | 3,350 | 2,400 | 4,700 | 7,400 | 1,700 | 3,000 | 9,850 | 3,500 | 3,100 | 000   | 72,220 | 3,011 |         |
| 43                            | do     | do            | Fall plowed    | 5,410 | 5,030 | 5,810 | 4,450 | 1,410 | 380   | 4,770 | 1,260 | 1,000 | 3,800 | 1,980 | 1,650 | 3,600 | 4,350 | 9,000 | 2,800 | 3,800 | 7,850 | 2,500 | 3,000 | 700   | 64,840 | 3,242 |         |
| 44                            | Sorgho | do            | do             | 6,000 | 5,130 | 4,250 | 5,300 | 960   | 910   | 3,770 | 1,020 | 1,150 | 2,650 | 1,230 | 2,650 | 3,750 | 4,000 | 7,700 | 2,800 | 3,800 | 6,750 | 2,500 | 1,000 | 400   | 65,080 | 3,203 |         |
| 45                            | Oats   | do            | do             | 5,780 | 0,010 | 3,555 | 3,550 | 1,240 | 610   | 3,100 | 1,960 | 2,150 | 4,315 | 2,800 | 3,010 | 4,150 | 5,000 | 5,900 | 3,600 | 5,800 | 6,800 | 5,200 | 1,800 | 1,500 | 77,030 | 3,852 |         |
| 46                            | do     | do            | do             | 5,610 | 0,180 | 4,550 | 4,750 | 1,240 | 1,300 | 3,040 | 1,900 | 2,600 | 4,580 | 2,750 | 3,010 | 4,400 | 5,000 | 7,100 | 4,500 | 5,800 | 6,800 | 5,200 | 1,800 | 1,500 | 87,010 | 4,351 |         |
| 47                            | Wheat  | do            | do             | 5,750 | 0,320 | 3,800 | 4,100 | 1,310 | 1,010 | 3,700 | 1,370 | 1,950 | 5,060 | 3,200 | 3,200 | 3,200 | 5,000 | 6,200 | 3,400 | 4,700 | 7,000 | 3,550 | 2,800 | 1,000 | 73,480 | 3,674 |         |
| 48                            | Oats   | do            | Spring plowed  | 5,630 | (9)   | 3,900 | 3,000 | 1,150 | 1,010 | 3,900 | 1,060 | 1,420 | 3,300 | 1,730 | 1,030 | 1,500 | 5,100 | 4,400 | 3,000 | 3,000 | 5,550 | 2,800 | 1,000 | 200   | 48,870 | 3,072 |         |
| 49                            | do     | do            | Fall plowed    | 3,740 | 0,000 | 5,820 | 3,850 | 3,260 | 1,110 | 4,700 | 1,220 | 2,120 | 4,020 | 2,490 | 4,000 | 3,400 | 4,850 | 6,000 | 3,700 | 4,000 | 8,800 | 4,100 | 3,000 | 2,000 | 70,600 | 3,980 |         |
| 50                            | Barley | do            | do             | 4,820 | 1,680 | 2,750 | 6,000 | 4,110 | 4,700 | 1,680 | 2,750 | 2,320 | 3,490 | 3,180 | 4,680 | 3,900 | 6,750 | 6,400 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 60,200 | 4,410 |         |
| 51                            | Oats   | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 72,200 | 4,819 |         |
| 52                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 58,850 | 3,923 |         |
| 53                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 55,800 | 3,720 |         |
| 54                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 55                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 56                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 57                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 58                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 59                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 60                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 61                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 62                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 63                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 64                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 65                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 66                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 67                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 68                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 69                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 70                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 71                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 72                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 73                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 74                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 75                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 76                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 77                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 78                            | Wheat  | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 79                            | do     | do            | do             | 4,410 | 1,170 | 1,820 | 4,100 | 1,950 | 3,450 | 4,400 | 1,950 | 1,950 | 3,450 | 4,400 | 3,450 | 4,400 | 5,000 | 6,000 | 3,100 | 3,100 | 8,800 | 4,100 | 3,000 | 2,000 | 57,700 | 3,947 |         |
| 80                            | Wheat  |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |       |         |



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| 408 | Winter rye | Spring listed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |
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7 Corn thinned to one-half stand.

8 Crops grown but rotation not fully organized.

9 Record lost.



## CROP YIELDS AT THE ARCHER (WYO.) FIELD STATION

TABLE 63.—Annual acre yields of specified crops grown in rotations on individual plots at Archer, Wyo., in one or more years from 1913 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1914 to 1924, see Figure 26 (p. 40), Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, sunflowers, crested wheatgrass, millet and sunflower seed are given in pounds; all other yields are stated in bushels. An asterisk (\*) prefixed under "Winter wheat" indicates that winter wheat was winterkilled and the plot reseeded to spring wheat]

| Crop and rotation No. or plot | Previous crop     | Tillage method         | 1913  | 1914 | 1915 | 1916 | 1917  | 1918  | 1919 | 1920 | 1921 | 1922 | 1923  | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|-------------------|------------------------|-------|------|------|------|-------|-------|------|------|------|------|-------|------|------|------|-------|---------|
| WINTER WHEAT                  |                   |                        |       |      |      |      |       |       |      |      |      |      |       |      |      |      |       |         |
| A.....                        | Winter wheat..... | Late fall plowed.....  | *10.8 | *3.9 | 25.9 | 4.3  | *13.8 | *2.8  | *1.0 | 4.5  | 10.7 | *.4  | *7.0  | 12.8 | 5.3  | 11.2 | 74.7  | 5.7     |
| B.....                        | do.....           | Early fall plowed..... | *10.5 | *4.9 | 24.7 | 7.4  | *14.7 | 2.3   | *1.4 | 5.0  | 12.1 | *1.5 | *9.3  | 16.7 | 4.0  | 15.7 | 85.6  | 6.6     |
| Average.....                  |                   |                        |       |      | 25.3 | 5.9  |       |       |      | 4.8  | 11.4 |      |       | 14.8 | 4.7  | 13.5 | 80.2  | 6.2     |
| C or D.....                   | Fallow.....       | Fallow.....            | *11.7 | *8.6 | 30.5 | 11.4 | *16.3 | 19.2  | *3.3 | 5.3  | 22.9 | *8.7 | *6.3  | 18.7 | 20.3 | 19.2 | 147.5 | 11.3    |
| 85.....                       | do.....           | do.....                |       | *6.8 | 21.3 | *2.3 | *15.0 | 20.0  | .7   | 4.4  | 23.7 | *2.8 | *11.3 | 17.5 | 12.5 | 15.5 | 115.6 | 9.6     |
| 114.....                      | Corn.....         | Disked.....            | *10.8 | *4.8 | 29.3 | *4.3 | *11.8 | *10.5 | *2.4 | 2.7  | 23.5 | *.9  | *18.3 | 14.2 | 12.5 | 14.5 | 96.7  | 7.4     |
| 115.....                      | Winter rye.....   | Green manured.....     | *9.8  | *4.8 | 25.3 | *4.3 | *18.0 | *9.0  | *1.9 | 4.0  | 24.3 | *3.1 | *11.7 | 22.0 | 3.5  | 20.7 | 99.8  | 7.7     |
| 116.....                      | Corn.....         | Disked.....            | *10.6 | *4.7 | 27.5 | *6.5 | *16.3 | *16.7 | *2.3 | 3.7  | 27.5 | *.7  | *13.5 | 16.8 | 13.8 | 9.7  | 99.0  | 7.6     |
| 117.....                      | Peas.....         | Green manured.....     | *10.3 | *6.1 | 29.7 | *7.5 | *17.0 | *28.5 | *.8  | 3.5  | 17.5 | *2.0 | *9.2  | 21.2 | 18.3 | 18.2 | 108.4 | 8.3     |
| 118.....                      | Fallow.....       | Fallow.....            | *10.0 | *7.7 | 27.5 | *4.9 | *15.5 | 21.8  | 1.3  | 2.2  | 26.3 | *4.8 | *10.0 | 22.3 | 21.5 | 20.3 | 143.2 | 11.0    |
| 119.....                      | Corn.....         | Disked.....            | *6.0  | *4.8 | 24.5 | *1.7 | *9.6  | 24.0  | .3   | 2.8  | 23.2 | *.8  | *12.7 | 17.3 | 12.3 | 8.2  | 112.6 | 8.7     |
| 425.....                      | do.....           | Standing stalks.....   |       |      |      |      |       |       |      |      |      |      | *15.0 | 17.5 | 11.8 | 8.3  | 37.6  | 12.5    |
| 561.....                      | Oats.....         | Disked.....            |       |      |      | *6.0 | 10.2  | *18.6 | *0   | 6.5  | 10.1 | *.0  | *9.7  | 12.3 | 5.3  | 14.3 | 58.7  | 5.9     |
| 562.....                      | do.....           | do.....                |       |      |      | *3.5 | 9.8   | *26.3 | *0   | 7.3  | 11.4 | *.0  | *9.3  | 15.5 | 5.7  | 14.3 | 64.0  | 6.4     |
| 563.....                      | Fallow.....       | Fallow.....            |       |      |      |      |       |       |      |      |      |      | *8.8  | 25.8 | 13.5 | 12.8 | 52.1  | 17.4    |
| 571.....                      | Winter wheat..... | Disked.....            |       |      |      |      |       |       |      |      |      |      | *16.0 | 19.8 | 4.8  | 9.7  | 34.3  | 11.4    |
| 571.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | *10.7 | 15.3 | 3.7  | 10.7 | 29.7  | 9.9     |
| 572.....                      | do.....           | Fall plowed.....       |       |      |      |      |       |       |      |      |      |      | *12.1 | 12.8 | 2.8  | 8.7  | 24.3  | 8.1     |
| 572.....                      | do.....           | Disked.....            |       |      |      |      |       |       |      |      |      |      | *9.2  | 13.5 | 2.7  | 7.3  | 23.5  | 7.8     |
| 572.....                      | do.....           | Fall plowed.....       |       |      |      |      |       |       |      |      |      |      | *8.8  | 15.3 | 3.5  | 10.5 | 29.3  | 9.8     |
| 573.....                      | do.....           | Disked.....            |       |      |      |      |       |       |      |      |      |      | *12.8 | 19.3 | 3.5  | 9.3  | 32.1  | 10.7    |
| 573.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | *11.3 | 17.0 | 3.2  | 10.5 | 30.7  | 10.2    |
| Average.....                  |                   |                        |       |      | 26.4 |      | 10.0  | 21.9  | .8   | 4.1  | 20.8 |      |       | 17.5 | 8.6  | 12.4 | 66.2  | 9.5     |
| E.....                        | Winter wheat..... | Subsoiled.....         | *10.3 | *5.7 | 24.2 | 2.4  | *13.6 | *2.0  | *1.9 | 4.3  | 9.3  | *2.7 | *7.8  | 14.0 | 4.8  | 15.7 | 74.7  | 5.7     |
| F.....                        | do.....           | Fall listed.....       | *10.8 | *4.0 | 21.2 | 5.4  | *13.7 | *1.9  | *1.9 | 7.7  | 10.9 | *5.0 | *8.3  | 16.0 | 4.0  | 14.5 | 79.7  | 6.1     |
| Average.....                  |                   |                        |       |      | 22.7 | 3.9  |       |       |      | 6.0  | 10.1 |      |       | 15.0 | 4.4  | 15.1 | 77.2  | 5.9     |
| Seeding methods: 1            |                   |                        |       |      |      |      |       |       |      |      |      |      |       |      |      |      |       |         |
| 1 or 5.....                   | Fallow.....       | Fallow.....            |       |      |      |      |       |       |      |      |      |      | 3.0   | 21.7 | 19.3 | 20.5 | 61.5  | 20.5    |
| 2 or 6.....                   | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 8.8   | 22.3 | 16.5 | 18.7 | 57.5  | 19.2    |
| 3 or 7.....                   | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 12.0  | 4.2  | 9.7  | 14.8 | 28.7  | 9.6     |
| 4 or 8.....                   | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 17.3  | 17.5 | 13.0 | 13.0 | 43.5  | 14.5    |
| 9 or 11.....                  | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | *14.5 | 9.2  | 14.5 | 17.8 | 41.5  | 13.8    |
| 10 or 12.....                 | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | *16.0 | 14.2 | 20.5 | 8.0  | 42.7  | 14.2    |
| Average.....                  |                   |                        |       |      |      |      |       |       |      |      |      |      |       | 14.9 | 15.6 | 15.5 | 45.9  | 15.3    |
| SPRING WHEAT                  |                   |                        |       |      |      |      |       |       |      |      |      |      |       |      |      |      |       |         |
| A.....                        | Wheat.....        | Spring plowed.....     | 10.3  | 6.8  | 26.8 | 2.3  | 15.6  | 18.4  | 3.5  | 1.7  | 6.2  | 1.3  | 10.7  | 7.0  | 0.8  | 18.2 | 119.3 | 9.2     |
| B.....                        | do.....           | Fall plowed.....       | 10.0  | 7.5  | 23.7 | 2.4  | 13.6  | 13.2  | 2.5  | 3.1  | 4.5  | 1.5  | 7.3   | 5.7  | 1.0  | 14.8 | 100.8 | 7.8     |
| Average.....                  |                   |                        |       | 7.2  | 25.3 | 2.4  | 14.6  | 15.8  | 3.0  | 2.4  | 5.4  | 1.4  | 9.0   | 6.4  | .9   | 16.5 | 110.1 | 8.5     |
| C or D.....                   | Fallow.....       | Fallow.....            | 10.7  | 10.1 | 25.7 | 2.8  | 14.9  | 19.1  | 7.1  | 4.3  | 12.5 | 10.7 | 22.2  | 11.7 | 11.7 | 20.3 | 174.1 | 13.4    |
| 1.....                        | Corn.....         | Disked.....            | 8.7   | 8.3  | 24.5 | 5.3  | 16.7  | 30.1  | 5.5  | 2.9  | 12.8 | 1.0  | 17.8  | 12.2 | 6.7  | 20.3 | 164.1 | 12.6    |
| 2.....                        | do.....           | Spring plowed.....     | 9.5   | 9.4  | 26.7 | .9   | 17.0  | 22.3  | 3.3  | 2.7  | 11.7 | .9   | 15.3  | 9.8  | 6.5  | 17.3 | 143.8 | 11.1    |
| 3.....                        | do.....           | Fall plowed.....       | 9.7   | 5.7  | 20.3 | 1.3  | 13.2  | 20.7  | 1.7  | 2.3  | 8.3  | .3   | 9.8   | 8.7  | 4.3  | 16.8 | 113.4 | 8.7     |
| 4.....                        | Oats.....         | do.....                | 11.1  | 3.8  | 26.0 | 2.3  | 14.7  | 20.8  | 1.5  | 4.6  | 4.0  | 1.5  | 16.3  | 13.0 | 1.5  | 18.5 | 128.5 | 9.9     |
| 5.....                        | Fallow.....       | Fallow.....            | 9.3   | 9.3  | 25.5 | 6.5  | 16.3  | 37.1  | 7.0  | 3.3  | 13.5 | 4.0  | 16.8  | 13.8 | 11.5 | 20.3 | 174.9 | 13.5    |
| 8.....                        | Oats.....         | Fall plowed.....       | 9.0   | 4.8  | 22.5 | 2.3  | 12.1  | 20.2  | .3   | 3.6  | 7.8  | .3   | 10.7  | 10.2 | 1.8  | 11.5 | 111.1 | 8.5     |
| 9.....                        | do.....           | Spring plowed.....     | 10.3  | 4.6  | 23.7 | 1.6  | 11.0  | 22.7  | 1.5  | 3.0  | 9.3  | .2   | 10.5  | 9.2  | 2.5  | 16.7 | 116.5 | 9.0     |
| 14.....                       | Corn.....         | Disked.....            | 10.0  | 6.1  | 23.5 | 6.3  | 13.0  | 26.9  | 4.3  | 5.0  | 12.7 | 2.5  | 12.3  | 11.7 | 6.5  | 19.7 | 150.5 | 11.6    |
| 15.....                       | Winter rye.....   | Green manured.....     | 8.8   | 4.3  | 24.2 | 5.9  | 14.2  | 22.5  | 2.1  | 4.8  | 13.3 | .7   | 10.8  | 11.7 | 5.7  | 21.0 | 141.2 | 10.9    |
| 16.....                       | Corn.....         | Disked.....            | 12.2  | 8.8  | 27.0 | 6.3  | 14.7  | 34.5  | 7.3  | 4.8  | 12.0 | 5.0  | 21.8  | 13.8 | 9.3  | 23.3 | 188.6 | 14.5    |
| 17.....                       | Peas.....         | Green manured.....     | 10.7  | 9.7  | 26.5 | 11.4 | 16.5  | 38.1  | 2.0  | 5.2  | 9.2  | 4.0  | 10.2  | 12.5 | 8.8  | 21.3 | 175.4 | 13.5    |
| 18.....                       | Fallow.....       | Fallow.....            | 6.6   | 10.0 | 23.0 | 7.0  | 16.1  | 35.6  | 4.8  | 4.1  | 13.8 | 11.8 | 17.5  | 12.3 | 13.3 | 22.5 | 191.8 | 14.8    |
| 19.....                       | Corn.....         | Disked.....            | 8.6   | 6.4  | 22.3 | 6.7  | 16.2  | 31.1  | 4.5  | 5.3  | 13.3 | 8.0  | 12.7  | 11.8 | 7.5  | 20.2 | 166.0 | 12.8    |
| 35.....                       | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 13.2  | 12.2 | 7.8  | 19.7 | 39.7  | 13.2    |
| 41.....                       | do.....           | do.....                | 8.0   | 5.1  | 26.5 | 4.4  | 16.7  | 27.3  | 4.2  | 1.8  | 10.0 | 1.2  | 12.5  | 10.3 | 8.3  | 20.5 | 148.8 | 11.4    |
| 42.....                       | do.....           | do.....                | 10.3  | 5.7  | 27.8 | 2.6  | 15.5  | 26.8  | 6.1  | 3.6  | 12.8 | .8   | 9.2   | 11.5 | 8.2  | 16.2 | 146.8 | 11.3    |
| 49.....                       | do.....           | do.....                | 9.7   | 4.7  | 27.5 | 6.7  | 16.6  | 34.5  | 4.9  | 4.5  | 11.0 | 7.8  | 21.0  | 14.2 | 9.7  | 20.3 | 183.4 | 14.1    |
| 68.....                       | do.....           | do.....                | 10.2  | 7.1  | 24.3 | 5.1  | 16.1  | 33.5  | 4.3  | 4.0  | 11.0 | 2.8  | 13.0  | 13.0 | 7.3  | 14.5 | 156.0 | 12.0    |
| 71.....                       | do.....           | do.....                | 10.8  | 4.3  | 26.3 | 1.5  | 14.8  | 26.4  | 3.0  | 3.8  | 5.7  | .7   | 11.7  | 6.7  | 2.5  | 17.3 | 121.7 | 9.6     |
| 72.....                       | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 1.7   | 13.3 | 11.2 | 9.2  | 126.0 | 9.7     |
| 217.....                      | Fallow.....       | Fallow.....            | 10.8  | 6.5  | 20.8 | .6   | 12.5  | 21.2  | 4.1  | 4.0  | 11.7 | 1.7  | 13.3  | 11.2 | 9.2  | 9.2  | 126.0 | 9.7     |
| 408.....                      | Flax.....         | Spring plowed.....     |       | 9.0  | 26.3 | 4.3  | 12.2  | 25.2  | 2.9  | 2.1  | 10.3 | 1.3  | 9.0   | 10.2 | 2.2  | 16.3 | 122.3 | 10.2    |
| 421.....                      | Corn.....         | Disked.....            |       |      |      |      |       |       |      |      |      |      | 13.3  | 13.3 | 7.8  | 21.0 | 12.1  | 14.0    |
| 421.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 11.8  | 14.5 | 10.7 | 18.2 | 43.4  | 14.5    |
| 422.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 13.8  | 8.5  | 9.7  | 14.7 | 32.7  | 10.9    |
| 423.....                      | Millet.....       | do.....                |       |      |      |      |       |       |      |      |      |      | 22.3  | 11.2 | 3.5  | 15.2 | 29.9  | 10.0    |
| 421.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 11.0  | 8.8  | 2.8  | 16.7 | 28.3  | 9.4     |
| 126.....                      | Potatoes.....     | do.....                |       |      |      |      |       |       |      |      |      |      | 13.7  | 14.3 | 13.3 | 21.8 | 49.4  | 16.5    |
| 427.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 11.2  | 7.5  | 13.8 | 16.7 | 38.0  | 12.7    |
| 428.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 16.7  | 11.2 | 13.5 | 16.0 | 40.7  | 13.6    |
| 129.....                      | do.....           | do.....                |       |      |      |      |       |       |      |      |      |      | 13.2  | 9.8  | 12.8 | 17.3 | 39.9  | 13.3    |
| 119.....                      | Corn.....         | do.....                |       |      |      |      |       |       |      |      |      |      | 13.2  | 10.2 | 9.2  | 15.7 | 35.1  | 11.7    |
| 569.....                      | Fallow.....       | Fallow.....            |       |      |      |      |       |       |      |      |      |      | 18.7  | 12.7 | 10.5 | 20.5 | 43.7  | 11.6    |
| 570.....                      | Wheat.....        | Disked.....            |       |      |      |      |       |       |      |      |      |      | 14.5  | 12.8 | 3.0  | 16.8 | 32.6  | 10.9    |
| 571.....                      | Fallow.....       | Fallow.....            |       | 9.1  | 22.3 | 5.1  | 14.0  | 26.8  | 5.1  | 5.1  | 10.7 | 6.5  | 18.0  | 10.3 | 11.8 | 19.9 | 155.5 | 13.0    |
| 581.....                      | Wheat.....        | Disked.....            |       |      |      |      |       |       |      |      |      |      | 14.7  | 10.5 | 1.8  | 17.0 | 29.3  | 9.8     |
| 582.....                      | do.....           | Spring plowed.....     |       |      |      |      |       |       |      |      |      |      | 16.5  | 10.5 | 2.2  | 18.3 | 31.0  | 10.3    |
| 582.....                      | do.....           | Disked.....            |       |      |      |      |       |       |      |      |      |      | 12.8  | 10.8 | 3.3  | 17.8 | 31.6  | 10.5    |
| 583.....                      | do.....           | Spring plowed.....     |       |      |      |      |       |       |      |      |      |      |       |      |      |      |       |         |



## CROP YIELDS AT THE ARCHER (WYO.) FIELD STATION—Continued

TABLE 63.—Annual acre yields of specified crops grown in rotations on individual plots at Archer, Wyo., in one or more years from 1913 to 1926—Continued

| Crop and rotation<br>No. or plot | Previous crop | Tillage method | 1913  | 1914    | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Aver-<br>age |
|----------------------------------|---------------|----------------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------------|
| SPRING WHEAT—con.                |               |                |       |         |       |       |       |       |       |       |       |       |       |       |       |       |        |              |
| E.....                           | Wheat         | Subsoiled      | 11.0  | 5.8     | 25.0  | 1.0   | 16.6  | 12.0  | 2.0   | 2.9   | 3.8   | 7.5   | 13.5  | 9.5   | 1.0   | 19.5  | 120.1  | 9.2          |
| F.....                           | do            | Fall listed    | 9.3   | 5.8     | 23.5  | .8    | 14.3  | 8.8   | 3.2   | 2.7   | 4.7   | 3.8   | 6.8   | 5.7   | 1.7   | 13.2  | 95.0   | 7.3          |
| Average                          |               |                | ----- | 5.8     | 24.3  | .9    | 15.5  | 10.4  | 2.6   | 2.8   | 4.3   | 5.7   | 10.2  | 7.6   | 1.4   | 16.4  | 107.6  | 8.3          |
| H or I.....                      | Fallow        | Fallowed       | 10.5  | 7.3     | 25.0  | 3.6   | 14.2  | 18.7  | 3.2   | 3.1   | 9.8   | 4.5   | 15.3  | 7.3   | 11.3  | 14.3  | 137.6  | 10.6         |
| J or K.....                      | do            | do             | 9.9   | 9.8     | 23.5  | 3.4   | 14.7  | 19.6  | 3.8   | 2.3   | 7.5   | 5.5   | 17.0  | 6.5   | 10.8  | 16.0  | 140.4  | 10.8         |
| L or M.....                      | do            | do             | 11.5  | 9.2     | 25.3  | 4.3   | 15.9  | 19.5  | 6.1   | 3.9   | 12.8  | 7.7   | 13.0  | 11.5  | 12.0  | 18.8  | 159.6  | 12.3         |
| N or O.....                      | do            | do             | 10.5  | 7.8     | 29.0  | 4.7   | 13.9  | 25.3  | 1.4   | 1.3   | 12.2  | 5.3   | 12.2  | 10.7  | 2.5   | 20.7  | 147.0  | 11.3         |
| Average                          |               |                | ----- | 8.5     | 25.7  | 4.0   | 14.6  | 20.8  | 3.6   | 2.7   | 10.6  | 5.8   | 14.4  | 9.0   | 9.2   | 17.5  | 146.2  | 11.3         |
| OATS                             |               |                |       |         |       |       |       |       |       |       |       |       |       |       |       |       |        |              |
| A.....                           | Oats          | Spring plowed  | 5.0   | 15.0    | 33.8  | 3.9   | 25.8  | 25.6  | .2    | 3.8   | 2.8   | 0     | 8.1   | 13.1  | 0     | 16.3  | 148.4  | 11.4         |
| B.....                           | do            | Fall plowed    | 6.3   | 14.5    | 35.9  | 3.8   | 23.4  | 18.1  | 0     | 2.8   | 2.2   | 0     | 2.8   | 8.8   | 0     | 9.1   | 121.4  | 9.3          |
| Average                          |               |                | ----- | 14.8    | 34.9  | 3.9   | 24.6  | 21.9  | .1    | 3.3   | 2.5   | 0     | 5.5   | 11.0  | 0     | 12.7  | 134.9  | 10.4         |
| C or D.....                      | Fallow        | Fallowed       | 6.3   | 20.0    | 34.1  | 4.1   | 24.7  | 25.6  | 3.6   | 8.3   | 9.7   | 3.1   | 23.4  | 17.5  | 0     | 20.3  | 194.4  | 15.0         |
| 1.....                           | Wheat         | Fall plowed    | 17.2  | 9.4     | 44.7  | 4.8   | 33.8  | 37.0  | 2.0   | 17.2  | 7.2   | 2.8   | 15.3  | 20.0  | 0     | 31.6  | 226.2  | 17.4         |
| 2.....                           | do            | Spring plowed  | 18.3  | 23.4    | 44.1  | 2.8   | 34.5  | 27.7  | 1.6   | 16.9  | 16.6  | 1.3   | 13.4  | 16.3  | 0     | 30.6  | 229.2  | 17.6         |
| 3.....                           | do            | Fall plowed    | 16.3  | 9.8     | 38.3  | 3.6   | 22.8  | 21.1  | .4    | 8.9   | 2.3   | 0     | 7.5   | 13.4  | 0     | 20.6  | 146.7  | 11.3         |
| 4.....                           | Corn          | Disked         | 20.3  | 46.3    | 10.0  | 35.3  | 35.3  | 3.0   | 25.6  | 21.6  | 1.6   | 27.2  | 24.1  | 0     | 35.9  | 286.2 | 22.0   |              |
| 5.....                           | Wheat         | Fall plowed    | 14.1  | 10.0    | 42.8  | 4.1   | 30.2  | 32.5  | .1    | 15.0  | 5.0   | .3    | 13.1  | 19.1  | 0     | 20.3  | 192.5  | 14.8         |
| 6.....                           | Barley        | do             | 15.9  | 10.1    | 37.5  | 3.0   | 31.4  | 34.8  | 0     | 12.2  | 7.5   | .9    | 16.3  | 17.8  | 0     | 26.6  | 198.1  | 15.2         |
| 7.....                           | Corn          | Spring plowed  | 17.2  | 29.7    | 50.6  | 6.3   | 33.0  | 52.3  | 3.8   | 11.9  | 22.2  | 2.2   | 21.3  | 19.4  | 0     | 29.7  | 282.4  | 21.7         |
| 8.....                           | Fallow        | Fallowed       | 11.9  | 22.3    | 42.2  | 9.7   | 32.4  | 42.2  | 2.3   | 11.6  | 18.4  | 3.0   | 21.6  | 25.0  | 0     | 29.1  | 259.8  | 20.0         |
| 9.....                           | Corn          | Spring plowed  | 12.8  | 17.5    | 41.3  | 5.3   | 27.0  | 41.7  | 2.4   | 16.6  | 9.7   | 1.9   | 16.3  | 17.8  | 0     | 25.6  | 223.1  | 17.2         |
| 14.....                          | Winter rye    | Green manured  | 20.2  | 10.6    | 38.1  | 9.7   | 30.8  | 33.1  | 1.0   | 17.2  | 18.8  | 1.3   | 15.9  | 21.9  | 0     | 34.4  | 232.8  | 17.9         |
| 15.....                          | Corn          | Disked         | 15.5  | 20.8    | 38.4  | 10.9  | 35.5  | 46.7  | .4    | 21.1  | 20.0  | 5.0   | 25.6  | 17.2  | 0     | 29.1  | 270.7  | 20.8         |
| 16.....                          | Peas          | Green manured  | 16.1  | 20.8    | 43.4  | 20.3  | 33.3  | 39.4  | .6    | 18.0  | 23.1  | 1.3   | 14.1  | 25.0  | 0     | 25.9  | 265.2  | 20.4         |
| 17.....                          | Corn          | Disked         | 14.4  | 23.1    | 39.7  | 14.7  | 36.4  | 35.0  | 1.2   | 22.5  | 21.3  | 7.8   | 26.6  | 26.3  | 0     | 31.9  | 286.5  | 22.0         |
| 18.....                          | do            | do             | 10.6  | 21.6    | 44.4  | 16.3  | 33.3  | 58.9  | 1.4   | 23.6  | 15.6  | 6.7   | 14.7  | 23.8  | 0     | 35.9  | 296.2  | 22.8         |
| 19.....                          | Fallow        | Fallowed       | 15.3  | 20.0    | 42.5  | 12.7  | 28.3  | 51.1  | 1.7   | 14.4  | 16.9  | 4.1   | 30.3  | 19.4  | 0     | 32.5  | 273.9  | 21.1         |
| 40.....                          | Corn          | Disked         | 17.0  | 25.1    | 48.4  | 5.3   | 33.0  | 49.2  | 2.8   | 15.6  | 24.4  | .3    | 10.9  | 19.4  | 0     | 30.0  | 264.4  | 20.3         |
| 41.....                          | Bromegrass    | Fall plowed    | 12.7  | 10.5    | 42.2  | 2.5   | 23.3  | 24.7  | 1.1   | 10.0  | .2    | .9    | 8.8   | 14.1  | 0     | 21.6  | 159.9  | 12.3         |
| 42.....                          | Alfalfa       | do             | 15.2  | 11.9    | 42.6  | 1.9   | 27.3  | 18.4  | .9    | 12.8  | 15.0  | .3    | 4.7   | 7.8   | 0     | 19.7  | 162.3  | 12.5         |
| 68.....                          | Wheat         | do             | 15.0  | 12.7    | 41.6  | 2.8   | 29.4  | 33.6  | .2    | 18.4  | .6    | .3    | 25.9  | 15.9  | 0     | 29.1  | 210.5  | 16.2         |
| 71.....                          | Fallow        | Fallowed       | 11.3  | 21.1    | 39.7  | 1.7   | 28.6  | 34.3  | 1.6   | 17.5  | 11.6  | 1.9   | 12.2  | 16.6  | 0     | 24.4  | 211.2  | 16.2         |
| 72.....                          | Corn          | Disked         | 11.7  | 10.3    | 40.3  | 1.4   | 25.6  | 31.4  | 1.5   | 13.9  | 14.4  | 0     | 11.9  | 15.0  | 0     | 12.2  | 177.9  | 13.7         |
| 114.....                         | Winter rye    | Green manured  | 13.6  | 11.4    | 30.9  | 2.8   | 31.7  | 3.1   | .4    | 13.8  | 21.3  | 0     | 12.2  | 16.6  | 0     | 11.6  | 155.8  | 12.0         |
| 115.....                         | Corn          | Disked         | 17.5  | 21.4    | 40.3  | 7.2   | 28.0  | 40.9  | 3.9   | 17.8  | 15.3  | 5.3   | 30.6  | 19.7  | 0     | 31.3  | 261.7  | 20.1         |
| 116.....                         | Peas          | Green manured  | 10.6  | 18.8    | 33.8  | 4.1   | 25.8  | 38.4  | .5    | 14.1  | 4.7   | 1.3   | 11.9  | 9.7   | 0     | 17.5  | 180.6  | 13.9         |
| 117.....                         | Corn          | Disked         | 10.9  | 14.7    | 41.9  | 9.1   | 30.8  | 44.4  | .3    | 20.0  | 17.2  | .9    | 18.1  | 19.4  | 0     | 21.3  | 238.1  | 18.3         |
| 118.....                         | do            | do             | 13.1  | 12.7    | 34.1  | 8.6   | 29.2  | 38.4  | 2.7   | 8.4   | 13.4  | .9    | 19.1  | 13.1  | 0     | 21.6  | 202.2  | 15.6         |
| 119.....                         | Fallow        | Fallowed       | 8.8   | 16.6    | 25.6  | 5.3   | 28.6  | 32.5  | 1.3   | 8.4   | 11.9  | 2.3   | 25.9  | 11.9  | 0     | 11.9  | 182.2  | 14.0         |
| 248.....                         | Flax          | Spring plowed  |       | 19.5    | 42.5  | 7.7   | 21.4  | 36.6  | .7    | 5.9   | 13.1  | .9    | 15.6  | 18.8  | 0     | 31.6  | 214.3  | 16.5         |
| 440.....                         | Corn          | Disked         |       |         |       |       |       |       |       |       |       |       | 24.4  | 19.7  | 0     | 21.9  | 41.6   | 13.9         |
| 561.....                         | do            | Spring plowed  |       |         |       | 7.7   | 22.2  | 46.6  | .8    | 3.0   | 14.7  | .6    | 20.0  | 21.6  | 0     | 13.8  | 140.3  | 14.0         |
| 562.....                         | do            | Fall plowed    |       |         |       | 10.0  | 25.3  | 35.6  | .6    | 3.0   | 9.1   | .6    | 20.0  | 18.4  | 0     | 17.2  | 126.8  | 12.7         |
| Average                          |               |                | ----- | 17.0    | 40.5  | 7.0   | 29.6  | 36.6  | 13.7  | 14.3  | 13.8  | 18.9  | 17.6  | 18.2  | 0     | 25.0  | 212.9  | 16.9         |
| E.....                           |               |                |       |         |       |       |       |       |       |       |       |       |       |       |       |       |        |              |
| E.....                           | Oats          | Subsoiled      | 7.8   | 9.4     | 34.7  | 5.6   | 22.0  | 14.2  | 0     | 1.7   | 2.2   | 0     | 3.4   | 11.3  | 0     | 12.2  | 116.7  | 9.0          |
| F.....                           | do            | Fall listed    | 5.0   | 13.0    | 32.8  | 2.0   | 22.7  | 12.8  | .2    | 3.4   | 4.7   | 0     | 3.1   | 9.4   | 0     | 17.5  | 121.6  | 9.4          |
| Average                          |               |                | ----- | 11.2    | 33.8  | 3.8   | 22.4  | 13.5  | .1    | 2.6   | 3.5   | 0     | 3.3   | 10.4  | 0     | 14.9  | 119.2  | 9.2          |
| CORN TOTAL                       |               |                |       |         |       |       |       |       |       |       |       |       |       |       |       |       |        |              |
| Aa.....                          | Corn          | Spring plowed  | 4,510 | 2,800   | 4,450 | 4,230 | 3,790 | 4,180 | 3,550 | 1,150 | 2,700 | 1,550 | 3,920 | 2,640 | 2,980 | 1,340 | 39,280 | 3,022        |
| Ba.....                          | do            | Fall plowed    | 5,570 | 2,730   | 3,900 | 3,980 | 3,730 | 3,700 | 4,850 | 1,100 | 2,050 | 1,600 | 4,150 | 2,650 | 2,600 | 1,290 | 38,360 | 2,951        |
| Average                          |               |                | ----- | 2,765   | 4,175 | 4,105 | 3,760 | 3,940 | 4,200 | 1,125 | 2,375 | 1,575 | 4,050 | 2,645 | 2,790 | 1,315 | 38,820 | 2,987        |
| Ca or Da.....                    |               |                |       |         |       |       |       |       |       |       |       |       |       |       |       |       |        |              |
|                                  | Fallow        | Fallowed       | 5,280 | 2,720   | 3,250 | 6,030 | 3,700 | 2,825 | 3,500 | 1,650 | 1,730 | 2,450 | 4,100 | 2,650 | 3,610 | 860   | 40,075 | 3,083        |
| 1.....                           | Oats          | Fall plowed    | 4,250 | 1,650   | 3,500 | 2,880 | 3,900 | 5,085 | 2,550 | 880   | 900   | 2,050 | 3,800 | 2,050 | 1,760 | 1,379 | 32,385 | 2,491        |
| 2.....                           | do            | Spring plowed  | 4,290 | 2,700   | 3,800 | 5,330 | 5,300 | 5,250 | 3,900 | 1,950 | 2,220 | 2,100 | 4,100 | 2,500 | 2,500 | 1,160 | 42,810 | 3,293        |
| 3.....                           | do            | Fall plowed    | 4,290 | 1,900   | 2,700 | 1,920 | 3,420 | 3,960 | 1,850 | 1,700 | 900   | 1,950 | 4,470 | 1,950 | 1,070 | 1,070 | 29,440 | 2,265        |
| 4.....                           | Wheat         | do             | 4,730 | 1,850   | 3,625 | 3,100 | 3,630 | 4,915 | 2,500 | 1,420 | 1,050 | 2,100 | 3,630 | 1,870 | 2,850 | 1,260 | 33,800 | 2,600        |
| 6.....                           | Oats          | do             | 4,110 | 1,300   | 1,775 | 2,730 | 3,630 | 4,260 | 2,050 | 1,400 | 1,000 | 1,550 | 3,360 | 2,200 | 2,860 | 1,130 | 29,245 | 2,250        |
| 7.....                           | Barley        | Spring plowed  | 4,850 | 2,600   | 2,675 | 4,080 | 5,160 | 6,170 | 4,050 | 2,220 | 1,750 | 3,250 | 6,500 | 2,670 | 2,830 | 1,370 | 45,325 | 3,487        |
| 9.....                           | Wheat         | do             | 4,830 | 1,980   | 1,875 | 4,190 | 4,220 | 5,710 | 3,100 | 2,400 | 1,750 | 1,400 | 4,330 | 2,080 | 2,400 | 1,080 | 36,515 | 2,809        |
| 14.....                          | Oats          | do             | 4,660 | 1,850   | 3,225 | 4,480 | 4,150 | 6,580 | 3,600 | 1,700 | 1,980 | 2,000 | 4,000 | 2,540 | 3,050 | 1,440 | 40,685 | 3,130        |
| 15.....                          | Wheat         | do             | 4,430 | 2,150   | 3,500 | 5,280 | 4,100 | 6,175 | 4,350 | 2,550 | 1,820 | 2,050 | 3,800 | 2,790 | 2,920 | 1,490 | 42,975 | 3,306        |
| 16.....                          | Oats          | do             | 5,030 | 2,100   | 3,670 | 4,230 | 4,150 | 5,330 | 3,250 | 2,050 | 1,900 | 2,200 | 4,120 | 2,490 | 3,660 | 1,330 | 40,480 | 3,114        |
| 17.....                          | Wheat         | do             | 5,300 | 2,050   | 2,725 | 4,770 | 3,000 | 5,940 | 4,650 | 2,430 | 1,750 | 2,800 | 4,750 | 2,190 | 3,310 | 1,550 | 41,915 | 3,224        |
| 18.....                          | do            | do             | 3,900 | 2,420   | 2,900 | 4,680 | 3,390 | 6,420 | 3,630 | 2,200 | 1,850 | 2,100 | 4,760 | 2,570 | 2,630 | 1,420 | 40,970 | 3,152        |
| 19.....                          | Oats          | do             | 4,210 | 1,730   | 3,150 | 4,980 | 3,470 | 6,330 | 3,050 | 1,700 | 1,730 | 1,800 | 4,900 | 2,610 | 2,400 | 1,420 | 39,470 | 3,036        |
| 35.....                          | Wheat         | Disked         |       |         |       |       |       |       |       |       |       |       | 1,210 | 3,770 | 1,300 | 6,280 | 2,093  |              |
| 40.....                          | Oats          | Fall plowed    | 4,650 | 2,250</ |       |       |       |       |       |       |       |       |       |       |       |       |        |              |



## CROP YIELDS AT THE ARCHER (WYO.) FIELD STATION—Continued

TABLE 63.—Annual acre yields of specified crops grown in rotations on individual plots at Archer, Wyo., in one or more years from 1913 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN TOTAL—CON.               |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 421                           | Wheat         | Spring plowed  |       |       |       |       |       |       |       |       |       |       | 3,600 | 2,200 | 3,970 | 900   | 7,070  | 2,357   |
|                               | do            | do             |       |       |       |       |       |       |       |       |       |       | 4,410 | 2,470 | 4,260 | 1,050 | 7,780  | 2,593   |
| 422                           | Wheat         | do             |       |       |       |       |       |       |       |       |       |       | 3,630 | 1,790 | 1,920 | 1,120 | 4,830  | 1,610   |
|                               | Corn          | Disked         |       |       |       |       |       |       |       |       |       |       | 3,990 | 1,580 | 3,020 | 860   | 5,460  | 1,820   |
| 423                           | Wheat         | Spring plowed  |       |       |       |       |       |       |       |       |       |       | 4,200 | 2,000 | 2,720 | 1,400 | 6,120  | 2,040   |
| 425                           | Millet        | do             |       |       |       |       |       |       |       |       |       |       | 4,120 |       | 3,230 |       | 3,230  | 3,230   |
| 428                           | Wheat         | do             |       |       |       |       |       |       |       |       |       |       | 3,580 | 1,850 | 1,350 | 1,650 | 4,850  | 1,617   |
| 429                           | do            | do             |       |       |       |       |       |       |       |       |       |       | 4,310 | 1,640 | 2,530 | 1,560 | 5,730  | 1,910   |
| 440                           | Oats          | do             |       |       |       |       |       |       |       |       |       |       | 4,500 | 2,110 | 1,600 | 1,530 | 5,240  | 1,747   |
| 441                           | Flax          | do             |       |       |       |       |       |       |       |       |       |       | 4,110 | 2,040 | 2,120 | 1,210 | 5,370  | 1,790   |
| 449                           | Wheat         | do             |       |       |       |       |       |       |       |       |       |       | 4,310 | 1,620 | 1,490 | 1,140 | 4,250  | 1,417   |
| 561                           | Winter wheat  | do             |       |       |       | 5,230 | 5,710 | 6,535 | 3,550 | 1,100 | 1,160 | 1,600 | 3,510 | 1,690 | 1,650 | 1,100 | 27,605 | 2,761   |
| 562                           | do            | Fall plowed    |       |       |       | 5,880 | 3,330 | 6,615 | 2,000 | 1,450 | 100   | 1,500 | 4,750 | 1,370 | 1,430 | 1,110 | 23,655 | 2,366   |
| Average                       |               |                |       | 2,055 | 3,250 | 3,865 | 4,148 | 5,743 | 3,176 | 1,806 | 1,408 | 1,905 | 4,383 | 2,129 | 2,381 | 1,232 | 27,377 | 2,606   |
| Ea                            | Corn          | Subsoiled      | 5,480 | 2,870 | 4,450 | 4,210 | 5,130 | 2,940 | 5,350 | 700   | 2,000 | 1,800 | 4,840 | 2,900 | 4,340 | 390   | 41,920 | 3,225   |
| Fa                            | do            | Spring listed  | 5,510 | 2,580 | 1,900 | 3,000 | 2,490 | 3,430 | 4,200 | 870   | 1,450 | 1,650 | 2,500 | 1,920 | 2,440 | 0     | 28,430 | 2,187   |
| Average                       |               |                |       | 2,725 | 3,125 | 3,605 | 3,810 | 3,185 | 4,775 | 785   | 1,725 | 1,725 | 4,670 | 2,410 | 3,390 | 195   | 35,175 | 2,706   |
| Ab                            | Corn          | Spring plowed  |       |       |       |       |       |       |       |       |       |       | 4,370 | 1,490 | 2,230 | 1,270 | 4,990  | 1,666   |
| Bb                            | do            | Fall plowed    |       |       |       |       |       |       |       |       |       |       | 4,310 | 1,530 | 2,260 | 1,570 | 5,310  | 1,787   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       |       |       | 1,510 | 2,245 | 1,420 | 5,175  | 1,725   |
| Eb                            | Corn          | Subsoiled      |       |       |       |       |       |       |       |       |       |       | 4,410 | 1,620 | 2,160 | 1,480 | 5,260  | 1,753   |
| Fb                            | do            | Spring listed  |       |       |       |       |       |       |       |       |       |       | 2,750 | 950   | 3,170 | 1,180 | 5,800  | 1,767   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       |       |       | 1,285 | 2,665 | 1,330 | 5,280  | 1,760   |
| Cb or Db                      | Fallow        | Fallowed       |       |       |       |       |       |       |       |       |       |       | 4,910 | 1,170 | 3,130 | 1,270 | 5,570  | 1,857   |
| CORN GRAIN                    |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Aa                            | Corn          | Spring plowed  | 0     | 19.7  | 0     | 22.3  | 21.8  | 14.1  | 11.7  | 4.0   | 21.1  | 12.4  | 32.9  | 18.8  | 17.3  | 10.8  | 206.9  | 15.9    |
| Ba                            | do            | Fall plowed    | 0     | 20.8  | 0     | 15.4  | 18.0  | 15.0  | 7.5   | 3.9   | 18.5  | 14.1  | 33.6  | 19.3  | 16.8  | 9.9   | 192.8  | 14.8    |
| Average                       |               |                |       | 20.3  | 0     | 18.9  | 19.9  | 14.6  | 9.6   | 4.0   | 19.8  | 13.3  | 33.3  | 19.1  | 17.1  | 10.4  | 199.9  | 15.4    |
| Ca or Da                      | Fallow        | Fallowed       | 0     | 20.0  | 0     | 29.8  | 22.1  | 14.3  | 12.4  | 5.8   | 16.0  | 18.8  | 32.6  | 18.7  | 23.3  | 6.9   | 220.7  | 17.0    |
| 1                             | Oats          | Fall plowed    | 0     | 11.5  | 0     | 15.0  | 20.4  | 30.4  | 6.4   | 4.2   | 8.1   | 18.8  | 33.3  | 14.8  | 9.1   | 11.4  | 183.4  | 14.1    |
| 2                             | do            | Spring plowed  | 0     | 17.5  | 0     | 24.8  | 24.3  | 25.6  | 11.9  | 5.6   | 18.1  | 17.5  | 32.7  | 18.0  | 14.7  | 8.9   | 219.6  | 16.9    |
| 3                             | do            | Fall plowed    | 0     | 13.3  | 0     | 8.4   | 22.5  | 22.0  | 3.0   | 4.7   | 6.5   | 12.4  | 35.3  | 14.4  | 7.7   | 9.3   | 159.5  | 12.3    |
| 4                             | Wheat         | do             | 0     | 12.1  | 0     | 18.8  | 19.1  | 31.4  | 5.0   | 7.6   | 8.7   | 18.5  | 33.1  | 13.7  | 16.3  | 9.9   | 194.2  | 14.9    |
| 6                             | Oats          | do             | 0     | 6.8   | 0     | 13.8  | 18.8  | 27.0  | 3.6   | 3.3   | 9.2   | 13.2  | 28.8  | 16.0  | 15.7  | 9.3   | 165.5  | 12.7    |
| 7                             | Barley        | Spring plowed  | 0     | 18.0  | 0     | 25.4  | 20.4  | 28.4  | 9.6   | 6.8   | 15.6  | 17.9  | 48.0  | 21.3  | 15.3  | 12.1  | 238.8  | 18.4    |
| 9                             | Wheat         | do             | 0     | 12.0  | 0     | 19.4  | 19.9  | 33.3  | 5.0   | 8.9   | 15.7  | 12.1  | 34.4  | 14.5  | 12.3  | 8.6   | 196.1  | 15.1    |
| 14                            | Oats          | do             | 0     | 10.5  | 0     | 21.0  | 21.3  | 42.3  | 6.2   | 2.7   | 14.9  | 16.5  | 34.1  | 17.5  | 16.0  | 11.9  | 214.9  | 16.5    |
| 15                            | Wheat         | do             | 0     | 12.7  | 0     | 27.3  | 20.4  | 35.9  | 5.4   | 6.5   | 15.6  | 19.0  | 31.2  | 20.4  | 16.5  | 12.5  | 223.4  | 17.2    |
| 16                            | Oats          | do             | 0     | 12.1  | 0     | 20.4  | 22.1  | 34.8  | 4.6   | 3.2   | 15.7  | 20.4  | 36.3  | 17.2  | 20.1  | 10.1  | 217.0  | 16.7    |
| 17                            | Wheat         | do             | 0     | 12.9  | 0     | 23.4  | 14.3  | 36.8  | 8.8   | 6.3   | 14.9  | 26.6  | 40.0  | 15.2  | 19.3  | 11.9  | 230.4  | 17.7    |
| 18                            | do            | do             | 0     | 15.4  | 0     | 26.0  | 19.8  | 41.5  | 4.2   | 7.6   | 14.7  | 18.7  | 39.5  | 18.3  | 19.1  | 11.9  | 236.7  | 18.2    |
| 19                            | Oats          | do             | 0     | 10.3  | 0     | 29.8  | 17.9  | 46.6  | 4.6   | 2.8   | 11.7  | 14.8  | 40.7  | 18.8  | 13.5  | 11.9  | 223.4  | 17.2    |
| 35                            | Wheat         | Disked         |       |       |       |       |       |       |       |       |       |       |       | 9.1   | 13.5  | 9.6   | 38.2   | 12.7    |
| 40                            | Oats          | Fall plowed    | 0     | 16.1  | 0     | 7.5   | 16.6  | 28.8  | 4.4   | 7.0   | 8.7   | 15.5  | 50.0  | 22.0  | 14.1  | 12.4  | 203.1  | 15.6    |
| 41                            | do            | Spring plowed  | 0     | 13.5  | 0     | 19.4  | 24.1  | 39.8  | 3.7   | 6.7   | 16.3  | 10.4  | 31.3  | 20.0  | 12.7  | 11.0  | 208.9  | 16.1    |
| 42                            | do            | do             | 0     | 15.2  | 0     | 24.8  | 25.0  | 38.7  | 6.0   | 7.9   | 17.5  | 14.6  | 54.7  | 17.5  | 13.1  | 11.0  | 246.0  | 18.9    |
| 49                            | Wheat         | Fall plowed    | 0     | 12.3  | 0     | 9.0   | 13.5  | 32.3  | 9.9   | 8.2   | 9.4   | 15.5  | 32.3  | 14.9  | 16.0  | 10.4  | 183.7  | 14.1    |
| 68                            | Oats          | Spring plowed  | 0     | 9.2   | 0     | 22.3  | 22.0  | 47.3  | 4.8   | 7.0   | 9.2   | 12.1  | 41.5  | 15.5  | 8.5   | 9.7   | 209.1  | 16.1    |
| 71                            | do            | do             | 0     | 14.6  | 0     | 21.4  | 27.6  | 37.7  | 3.7   | 3.4   | 15.7  | 12.9  | 30.7  | 13.7  | 14.4  | 11.1  | 193.3  | 14.9    |
| 72                            | Wheat         | do             | 0     | 12.6  | 0     | 18.9  | 23.0  | 22.9  | 4.4   | 4.3   | 15.1  | 17.9  | 44.0  | 15.3  | 9.6   | 9.4   | 197.4  | 15.2    |
| 79                            | Barley        | do             |       |       |       |       |       |       |       |       |       |       | 38.0  | 13.2  | 8.0   | 11.9  | 33.1   | 11.0    |
| 85                            | Winter wheat  | Fall plowed    | 0     | 8.4   | 0     | 6.9   | 20.5  | 27.1  | 0     | 3.5   | 2.4   | 10.1  | 31.3  | 8.3   | 4.3   | 4.4   | 118.8  | 9.9     |
| 114                           | Oats          | Spring plowed  | 0     | 16.7  | 0     | 20.4  | 21.8  | 25.3  | 3.7   | 1.7   | 12.5  | 15.2  | 45.3  | 13.9  | 12.1  | 10.4  | 199.0  | 15.3    |
| 115                           | Winter wheat  | do             | 0     | 16.0  | 0     | 23.1  | 25.5  | 32.4  | 10.5  | 3.9   | 11.0  | 21.2  | 36.5  | 18.4  | 19.3  | 6.5   | 224.3  | 17.3    |
| 116                           | Oats          | do             | 0     | 9.9   | 0     | 26.0  | 18.5  | 26.3  | 6.4   | 1.9   | 12.5  | 12.0  | 31.3  | 15.6  | 12.7  | 8.1   | 181.2  | 13.9    |
| 117                           | Winter wheat  | do             | 0     | 11.0  | 0     | 22.9  | 25.0  | 35.0  | 8.5   | 3.9   | 16.7  | 13.3  | 38.4  | 17.9  | 9.2   | 8.9   | 210.7  | 16.2    |
| 118                           | do            | do             | 0     | 11.1  | 0     | 21.6  | 27.5  | 34.1  | 1.2   | 3.1   | 12.5  | 14.8  | 32.8  | 19.6  | 8.8   | 10.1  | 197.2  | 15.2    |
| 119                           | Oats          | do             | 0     | 8.0   | 0     | 20.3  | 18.5  | 37.9  | 1.4   | 3.8   | 6.1   | 11.7  | 30.8  | 11.3  | 7.7   | 10.6  | 168.1  | 12.9    |
| 243                           | Flax          | do             |       | 7.3   | 0     | 25.4  | 24.0  | 30.3  | 0     | 4.8   | 8.8   | 11.9  | 28.3  | 11.3  | 7.5   | 8.9   | 161.2  | 13.4    |
| 244                           | do            | Fall plowed    |       | 8.9   | 0     | 6.0   | 19.8  | 25.4  | 0     | 2.4   | 3.6   | 7.3   | 32.4  | 12.0  | 5.1   | 9.4   | 124.3  | 10.4    |
| 245                           | do            | Spring plowed  |       | 6.8   | 0     | 21.6  | 23.3  | 37.3  | 5.0   | 7.2   | 11.9  | 19.9  | 31.2  | 16.7  | 13.6  | 12.2  | 189.9  | 15.8    |
| 246                           | do            | do             |       |       |       |       |       |       |       |       |       |       | 37.9  | 14.8  | 8.8   | 12.6  | 190.8  | 15.9    |
| 408                           | Wheat         | Spring listed  |       | 17.5  | 0     | 26.0  | 19.6  | 39.8  | 4.7   | 5.0   | 9.4   | 12.2  | 37.9  | 12.0  | 3.5   | 9.2   | 24.7   | 8.2     |
| 421                           | do            | Spring plowed  |       |       |       |       |       |       |       |       |       |       | 30.7  | 14.7  | 22.1  | 8.1   | 44.9   | 15.0    |
|                               | Corn          | do             |       |       |       |       |       |       |       |       |       |       | 34.1  | 18.8  | 22.7  | 9.4   | 50.9   | 17.0    |
| 422                           | Wheat         | do             |       |       |       |       |       |       |       |       |       |       | 30.0  | 11.7  | 11.2  | 7.2   | 30.1   | 10.0    |
|                               | Corn          | Disked         |       |       |       |       |       |       |       |       |       |       | 29.9  | 11.2  | 16.3  | 6.3   | 33.8   | 11.3    |
| 423                           | Wheat         | Spring plowed  |       |       |       |       |       |       |       |       |       |       | 36.7  | 14.1  | 16.3  | 10.4  | 40.8   | 13.6    |
| 425                           | Millet        | do             |       |       |       |       |       |       |       |       |       |       | 36.0  | 12.0  | 17.1  | 9.7   | 38.8   | 12.9    |
| 428                           | Wheat         | do             |       |       |       |       |       |       |       |       |       |       | 31.7  | 12.9  | 8.0   | 15.3  | 36.2   | 12.1    |
| 429                           | do            | do             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE ARCHER (WYO.) FIELD STATION—Continued

TABLE 63.—Annual acre yields of specified crops grown in rotations on individual plots at Archer, Wyo., in one or more years from 1913 to 1926—Continued

| Crop and rotation<br>No. or plot | Previous crop           | Tillage method     | 1913 | 1914 | 1915  | 1916 | 1917  | 1918  | 1919  | 1920 | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|----------------------------------|-------------------------|--------------------|------|------|-------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|--------|---------|
| BARLEY                           |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| A.....                           | Barley.....             | Spring plowed..... |      | 16.7 | 31.3  | 6.5  | 12.7  | 38.6  | 1.1   | 1.4  | 10.4  | 3.2   | 5.8   | 6.0   | 1.3   | 26.7  | 145.0  | 12.1    |
| B.....                           | do.....                 | Fall plowed.....   |      | 15.8 | 29.8  | 5.2  | 10.8  | 23.4  | .3    | 1.5  | 7.3   | 2.5   | 2.9   | 6.7   | .8    | 24.0  | 115.2  | 9.6     |
| Average.....                     |                         |                    |      |      | 30.6  | 5.9  | 11.8  | 31.0  | .7    | 1.5  | 8.9   | 2.9   | 4.4   | 6.4   | 1.1   | 25.4  | 130.1  | 10.9    |
| C or D.....                      | Fallow.....             | Fallow.....        |      | 17.5 | 31.0  | 13.8 | 14.8  | 44.4  | 5.7   | 7.7  | 19.6  | 9.8   | 20.6  | 17.9  | 7.7   | 35.2  | 228.2  | 19.0    |
| 6.....                           | Corn.....               | Disked.....        | 5.8  | 10.4 | 30.2  | 12.9 | 17.9  | 32.5  | 5.0   | 5.9  | 17.3  | 4.4   | 10.2  | 15.2  | 9.2   | 23.3  | 199.4  | 15.3    |
| 7.....                           | Oats.....               | Spring plowed..... | 7.0  | 12.5 | 35.6  | 7.3  | 19.0  | 30.4  | 5.1   | 4.3  | 15.6  | 1.5   | 9.2   | 18.1  | 3.3   | 20.8  | 182.7  | 14.1    |
| 85.....                          | Flax.....               | Disked.....        |      | 14.2 | 30.4  | 6.6  | 9.0   | 30.6  | 2.0   | 6.7  | 11.7  | 5.1   | 4.6   | 14.6  | 1.9   | 26.7  | 149.9  | 12.5    |
| 79.....                          | Corn.....               | do.....            |      |      |       |      |       |       |       |      |       |       | 12.7  | 14.8  | 10.0  | 21.9  | 46.7   | 15.6    |
| Average.....                     |                         |                    |      | 7.6  | 32.1  | 8.9  | 15.3  | 31.2  | 4.0   | 5.6  | 14.9  | 3.7   | 8.0   | 15.7  | 6.1   | 24.4  | 144.7  | 14.4    |
| E.....                           | Barley.....             | Subsoiled.....     |      | 15.8 | 35.8  | 4.2  | 13.3  | 7.3   | 0     | 6.5  | 8.5   | 2.0   | 4.6   | 9.4   | .8    | 23.1  | 115.5  | 9.6     |
| F.....                           | do.....                 | Fall listed.....   |      | 15.0 | 30.6  | 1.8  | 11.5  | 22.7  | .2    | 9.4  | 9.6   | 2.1   | 5.0   | 6.0   | 1.9   | 20.8  | 121.6  | 10.1    |
| Average.....                     |                         |                    |      |      | 33.2  | 3.0  | 12.4  | 15.0  | .1    | 8.0  | 9.1   | 2.1   | 4.8   | 7.7   | 1.4   | 22.0  | 118.6  | 9.9     |
| FLAX                             |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| A.....                           | Flax.....               | Spring plowed..... | 4.9  | 4.4  | 11.1  | 0    | 7.1   | 2.3   | 0     | 0    | .6    | 0     |       |       |       |       | 25.5   | 2.8     |
| B.....                           | do.....                 | Fall plowed.....   | 6.4  | 4.5  | 12.7  | 0    | 3.6   | .9    | 0     | 0    | .8    | 0     |       |       |       |       | 22.5   | 2.5     |
| Average.....                     |                         |                    | 5.7  | 4.5  | 11.9  | 0    | 5.4   | 1.6   | 0     | 0    | .7    | 0     |       |       |       |       | 24.0   | 2.7     |
| C or D.....                      | Fallow.....             | Fallow.....        | 6.0  | 6.3  | 13.9  | 0    | 8.0   | 1.1   | 0     | 0    | 1.7   | 1.6   |       |       |       |       | 32.6   | 3.6     |
| 85.....                          | Corn.....               | Spring plowed..... |      | 4.4  | 10.7  | 0    | 7.8   | 2.8   | 0     | 0    | 3.5   | 0     | 2.0   | 1.4   | 8.8   | 0     | 37.0   | 3.1     |
| 243.....                         | do.....                 | do.....            |      | 4.6  | 11.8  | 0    | 8.2   | 4.6   | 0     | 0    | 3.3   | .9    | 3.6   | 2.3   | 4.5   | 0     | 39.2   | 3.3     |
| 244.....                         | do.....                 | Fall plowed.....   |      | 5.6  | 11.1  | 0    | 7.2   | 2.4   | 0     | 0    | 1.9   | .9    | 1.6   | 1.6   | 5.5   | 0     | 32.2   | 2.7     |
| 245.....                         | do.....                 | Disked.....        |      | 5.2  | 10.4  | 0    | 10.7  | 5.9   | 0     | 0    | 5.0   | .5    | 4.3   | 0     | 4.6   | 0     | 41.4   | 3.5     |
| 246.....                         | do.....                 | do.....            |      | 4.5  | 13.4  | 0    | 9.4   | 5.4   | 0     | 0    | 3.1   | .2    | 0     | 1.6   | 5.9   | 0     | 39.0   | 3.3     |
| 247.....                         | Wheat.....              | Spring plowed..... |      | 5.0  | 15.0  | 0    | 8.6   | 4.2   | 0     | 0    | 4.6   | 0     | 0     | 0     | 3.6   | 0     | 36.0   | 3.0     |
| 248.....                         | Oats.....               | do.....            |      | 4.7  | 15.4  | 0    | 9.3   | 1.7   | 0     | 0    | 2.7   | 0     | 0     | 0     | 2.9   | 0     | 32.0   | 2.7     |
| 441.....                         | Potatoes.....           | Disked.....        |      |      |       |      |       |       |       |      |       |       | 0     | .5    | 13.0  | 0     | 13.5   | 4.5     |
| 471.....                         | Crested wheatgrass..... | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 0     | 2.0   | 0     | 0     | 2.0    | .7      |
|                                  | Flax.....               | do.....            |      | 2.4  | 8.6   | 1.8  | 3.7   | .9    | 0     | 0    | 1.3   | .2    |       |       |       |       | 16.5   | 2.1     |
| Average.....                     |                         |                    |      |      | 12.1  | .2   | 8.1   | 3.5   | 0     | 0    | 3.2   | .3    | 1.6   | 1.0   | 5.4   | 0     | 28.9   | 2.9     |
| E.....                           | Flax.....               | Subsoiled.....     | 7.0  | 3.0  | 12.0  | 0    | 3.4   | .4    | 0     | 0    | .2    | .2    |       |       |       |       | 19.2   | 2.1     |
| F.....                           | do.....                 | Fall listed.....   | 7.0  | 3.3  | 8.6   | 0    | 0     | .4    | 0     | 0    | .4    | 0     |       |       |       |       | 12.7   | 1.4     |
| Average.....                     |                         |                    |      | 3.2  | 10.3  | 0    | 1.7   | .4    | 0     | 0    | .3    | .1    |       |       |       |       | 16.0   | 1.8     |
| BROMEGRASS                       |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 41.....                          | Wheat.....              | Disked.....        | 0    | 0    | 0     | (5)  | 0     | 1,200 | 1,250 | 50   | 680   | 1,000 | 0     | 1,400 | 0     | 0     | 5,580  | 465     |
|                                  | Bromegrass.....         | do.....            | 0    | 790  | 3,400 | (5)  | 2,450 | 450   | 500   | 750  | 820   | 450   | 1,100 | 800   | 200   | 530   | 12,240 | 1,020   |
|                                  | do.....                 | do.....            | 0    | 965  | 1,800 | (5)  | 3,100 | 950   | 350   | 680  | 1,050 | 320   | 915   | 1,330 | 100   | 700   | 12,290 | 1,022   |
| Average.....                     |                         |                    |      | 555  | 1,733 |      | 1,850 | 867   | 700   | 493  | 850   | 590   | 672   | 1,177 | 100   | 410   | 10,027 | 836     |
| ALFALFA                          |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 42.....                          | Wheat.....              | Fall plowed.....   | 0    | 0    | 340   | 0    | 0     | 0     | 0     | 0    | 700   | 0     | 0     | 0     | 0     | 0     | 1,040  | 80      |
|                                  | Alfalfa.....            | do.....            | 0    | 980  | 1,770 | 609  | 1,050 | 1,450 | 650   | 0    | 220   | 450   | 0     | 0     | 0     | 750   | 7,920  | 609     |
|                                  | do.....                 | do.....            | 0    | 860  | 2,920 | 750  | 1,600 | 1,300 | 400   | 0    | 330   | 350   | 160   | 0     | 0     | 750   | 9,420  | 725     |
| Average.....                     |                         |                    |      | 613  | 1,677 | 450  | 883   | 917   | 350   | 0    | 417   | 267   | 53    | 0     | 0     | 500   | 6,127  | 471     |
| POTATOES                         |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 426.....                         | Fallow.....             | Fallow.....        |      |      |       |      |       |       |       |      |       |       | 16.7  | 12.3  | 210.3 | 71.3  | 293.9  | 98.0    |
| 427.....                         | do.....                 | do.....            |      |      |       |      |       |       |       |      |       |       | 12.5  | 23.5  | 150.5 | 80.5  | 254.5  | 84.8    |
| 428.....                         | Corn.....               | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 16.0  | 12.3  | 102.2 | 72.3  | 186.8  | 62.3    |
| 429.....                         | Peas.....               | Fall plowed.....   |      |      |       |      |       |       |       |      |       |       | 15.2  | 22.2  | 124.8 | 80.2  | 227.2  | 75.7    |
| 441.....                         | Corn.....               | Disked.....        |      |      |       |      |       |       |       |      |       |       | 8.5   | 17.3  | 156.5 | 85.3  | 259.1  | 86.4    |
| Average.....                     |                         |                    |      |      |       |      |       |       |       |      |       |       |       | 17.5  | 148.9 | 77.9  | 244.3  | 81.4    |
| MILLET TOTAL                     |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 423.....                         | Corn.....               | Disked.....        |      |      |       |      |       |       |       |      |       |       | 3,210 | 1,200 | 4,200 | 2,750 | 8,150  | 2,717   |
| 424.....                         | Sunflowers.....         | do.....            |      |      |       |      |       |       |       |      |       |       | 2,150 | 1,260 | 2,050 | 950   | 4,200  | 1,420   |
| 425.....                         | Winter wheat.....       | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 2,950 | 1,650 | 2,250 | 950   | 4,850  | 1,617   |
| Average.....                     |                         |                    |      |      |       |      |       |       |       |      |       |       |       | 1,370 | 2,833 | 1,550 | 5,753  | 1,918   |
| MILLET SEED                      |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 423.....                         | Corn.....               | Disked.....        |      |      |       |      |       |       |       |      |       |       | 6.8   | 0     | 21.1  | 0     | 21.1   | 7.0     |
| 424.....                         | Sunflowers.....         | do.....            |      |      |       |      |       |       |       |      |       |       | 8.0   | 0     | 6.4   | 0     | 6.4    | 2.1     |
| 425.....                         | Winter wheat.....       | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 11.6  | 0     | 8.6   | 0     | 8.6    | 2.9     |
| Average.....                     |                         |                    |      |      |       |      |       |       |       |      |       |       |       | 0     | 12.0  | 0     | 12.0   | 4.0     |
| FIELD PEAS                       |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 429.....                         | Corn.....               | Disked.....        |      |      |       |      |       |       |       |      |       |       | 1,520 | 1,100 | 2,000 | 2,180 | 5,280  | 1,760   |
| SUNFLOWERS TOTAL                 |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 424.....                         | Wheat.....              | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 7,900 | 2,100 | 1,450 | 2,370 | 5,920  | 1,973   |
| SUNFLOWER SEED                   |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 424.....                         | Wheat.....              | Spring plowed..... |      |      |       |      |       |       |       |      |       |       | 610   | 330   | 300   | 0     | 630    | 210     |
| CRESTED WHEAT-GRASS              |                         |                    |      |      |       |      |       |       |       |      |       |       |       |       |       |       |        |         |
| 441.....                         | Flax.....               | Disked.....        |      |      |       |      |       |       |       |      |       |       | 0     | 1,820 | 200   | 0     | 2,020  | 673     |
|                                  | Crested wheatgrass..... | do.....            |      |      |       |      |       |       |       |      |       |       | 0     | 2,150 | 0     | 1,070 | 3,220  | 1,073   |
| Average.....                     |                         |                    |      |      |       |      |       |       |       |      |       |       |       | 1,983 | 100   | 535   | 2,620  | 873     |

<sup>4</sup> Grain largely destroyed by squirrels, yields calculated.<sup>5</sup> Yield lost.<sup>6</sup> Peas plowed under; yield estimated.

## CROP YIELDS AT THE AKRON (COLO.) FIELD STATION

TABLE 64.—Annual acre yields of specified crops grown in rotations on individual plots at Akron, Colo., in one or more years from 1908 to 1926

[For descriptions of rotations, see pages 32-43. Replanted rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replantings were used. For climatic conditions 1909 to 1924, see Figure 28 (p. 42). Miscellaneous Circular No. 81. Yields of total weight of corn, bromegrass, alfalfa, sorgo, milo, and kalf are given in pounds; all other yields are stated in bushels. An asterisk (\*) prefixed under "Winter wheat" indicates that winter wheat was winterkilled and the plot resodded to spring wheat.]

| Crop and rotation No. or plot | Previous crop     | Tillage method         | 1908    | 1909    | 1910    | 1911    | 1912    | 1913    | 1914    | 1915    | 1916    | 1917    | 1918    | 1919    | 1920    | 1921    | 1922    | 1923    | 1924    | 1925    | 1926    | Total   | Average |      |
|-------------------------------|-------------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|
| WINTER WHEAT                  | Winter wheat..... | Late fall plowed.....  | *22.0   | *14.5   | 11.4    | 1.7     | 25.8    | 3.3     | 24.5    | 22.0    | 4.2     | 2.7     | 2.0     | 7.6     | 13.8    | 3.0     | 0       | 0.3     | 0       | 1.3     | 0       | 123.6   | 6.9     |      |
|                               | do.....           | Early fall plowed..... | *20.4   | 12.9    | 10.3    | 6.8     | 26.7    | 2.0     | 24.8    | 20.8    | 4.2     | 5.0     | 1.5     | 20.3    | 13.5    | 7.0     | 0       | 1.5     | 0       | 1.3     | 0       | 145.7   | 8.1     |      |
|                               | Average.....      |                        |         | 13.7    | 10.4    | 4.3     | 26.3    | 2.7     | 24.7    | 21.4    | 4.2     | 3.9     | 1.8     | 14.0    | 13.7    | 5.0     | 0       | .9      | 0       | 1.3     | 0       | 134.7   | 7.5     |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
| C or D.....                   | Fallow.....       | Fallowed.....          | *19.6   | *18.7   | 17.7    | 11.8    | 40.0    | 10.3    | 24.3    | 28.3    | 25.0    | 11.3    | 14.5    | 28.0    | 18.2    | 26.5    | 0       | 7.5     | 6.3     | 15.2    | 0       | 284.9   | 15.8    |      |
|                               | Winter rye.....   | Green manured.....     | 24.4    | *15.3   | 17.8    | 5.8     | 43.2    | 6.2     | 30.7    | 28.8    | 15.8    | 6.3     | 6.5     | 18.7    | 13.8    | 15.3    | 3.3     | 3.3     | 5.7     | 2.8     | .5      | 224.5   | 12.5    |      |
|                               | do.....           | do.....                | 18.3    | *16.8   | 17.9    | 3.1     | 35.5    | 8.2     | 30.5    | 23.5    | 20.8    | 4.2     | 9.8     | 14.5    | 5.2     | 18.2    | 0       | 3.5     | 5.3     | 2.8     | .8      | 204.2   | 11.3    |      |
|                               | do.....           | do.....                | 15.8    | *14.2   | 14.0    | 4.6     | 34.0    | 6.8     | 26.5    | 24.5    | 19.2    | 5.7     | 9.2     | 14.2    | 16.3    | 18.2    | 0       | 2.5     | 7.0     | 2.7     | 1.0     | 205.4   | 11.4    |      |
|                               | Corn.....         | Disked.....            | 22.4    | *16.6   | 15.3    | 2.7     | 37.4    | 12.2    | 26.3    | 26.5    | 16.7    | 4.2     | 5.8     | 17.5    | 15.3    | 16.1    | 0       | 2.0     | 2.7     | 3.7     | .8      | 196.9   | 10.9    |      |
|                               | Fallow.....       | Fallowed.....          | *9.6    | *17.1   | 18.2    | 9.3     | 41.7    | 15.0    | 29.7    | 26.5    | 24.7    | 15.0    | 7.3     | 24.5    | 20.3    | 28.5    | 1.7     | 7.3     | 9.5     | 15.8    | 2.5     | 301.5   | 16.8    |      |
|                               | Winter rye.....   | Green manured.....     | *10.1   | *9.3    | 13.0    | 1.3     | 34.5    | 12.3    | 21.0    | 24.0    | 22.8    | 9.2     | 7.3     | 10.7    | 12.4    | 14.8    | 2.0     | 3.2     | 2.8     | 1.7     | 2.7     | 195.7   | 10.9    |      |
|                               | Corn.....         | Disked.....            | *23.2   | *10.5   | 18.4    | 4.8     | 40.3    | 9.2     | 28.5    | 29.0    | 16.3    | 5.2     | 1.8     | 15.7    | 15.4    | 17.7    | 0       | 4.8     | 2.5     | 2.8     | 1.0     | 201.9   | 11.2    |      |
|                               | Peas.....         | Green manured.....     | 18.0    | *17.5   | 15.3    | 3.5     | 38.5    | 3.8     | 30.5    | 16.5    | 13.2    | 5.2     | 1.8     | 18.7    | 14.6    | 17.7    | 0       | 3.0     | 2.3     | 3.3     | .5      | 188.4   | 10.5    |      |
|                               | do.....           | do.....                | 13.7    | *12.7   | 11.1    | 3.5     | 34.8    | 3.0     | 19.7    | 16.2    | 8.8     | 10.0    | 1.7     | 11.0    | 17.2    | 8.8     | 0       | 2.5     | 1.7     | 3.2     | 1.0     | 154.2   | 8.6     |      |
|                               | do.....           | do.....                | *4.6    | *9.4    | 10.8    | 1.8     | 29.3    | 5.7     | 21.3    | 10.0    | 7.5     | 6.3     | 2.2     | 5.8     | 13.4    | 8.3     | 0       | 1.8     | .8      | 2.2     | .8      | 128.0   | 7.1     |      |
|                               | do.....           | do.....                | 18.5    | *13.5   | 13.7    | .8      | 30.3    | 4.2     | 20.7    | 23.2    | 12.8    | 4.8     | 2.7     | 15.7    | 11.7    | 8.7     | 1.2     | 2.8     | 3.2     | 3.5     | .5      | 174.0   | 9.7     |      |
|                               | Corn.....         | Disked.....            | *6.8    | *15.0   | 19.3    | 1.7     | 31.2    | 12.8    | 28.3    | 17.3    | 9.0     | 2.5     | 12.7    | 7.8     | 12.9    | 9.3     | 2.2     | 1.0     | *3.7    | 11.0    | 2.2     | 13.2    | 6.6     |      |
|                               | do.....           | do.....                | 22.2    | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *2.8    | 13.3    | 1.0     | 14.3    | 7.2  |
|                               | do.....           | do.....                | 252     | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *1.7    | 20.8    | 1.7     | 22.5    | 11.3 |
|                               | do.....           | Fallow.....            | 267     | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *2.8    | 23.0    | 3.0     | 26.0    | 13.0 |
| (Winter wheat, Fallow)        | do.....           | do.....                | 263     | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *4.5    | 27.5    | 4.3     | 31.8    | 15.9    |      |
|                               | Winter wheat..... | Disked.....            | 22.2    | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *3.3    | 1.3     | .8      | 2.1     | 1.1     |      |
|                               | Fallow.....       | Fallowed.....          | 22.2    | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *2.7    | 19.8    | 3.5     | 23.3    | 11.7    |      |
|                               | do.....           | do.....                | 571     | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *3.7    | 3.3     | 1.3     | 4.6     | 2.3     |      |
| Average.....                  |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
| Bb.....                       | Winter wheat..... | Fall plowed.....       | 22.2    | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | *1.5    | 2.5     | .7      | 3.4     | 1.7     |      |
|                               | do.....           | Subsoiled.....         | *26.0   | *13.3   | 6.9     | 3.3     | 21.2    | 3.2     | 24.5    | 21.0    | 3.8     | 5.7     | 1.2     | 12.5    | 15.0    | 5.8     | 0       | 1.2     | .8      | 2.8     | 0       | 128.9   | 7.2     |      |
|                               | do.....           | Fall listed.....       | *24.2   | *12.2   | 8.8     | 4.0     | 30.0    | 7.2     | 21.3    | 18.2    | 7.7     | 3.8     | 3.0     | 14.2    | 11.7    | 9.0     | 0       | 0       | .5      | 2.7     | .8      | 142.9   | 7.9     |      |
|                               | Average.....      |                        |         | 25.1    | 12.8    | 7.9     | 3.7     | 25.6    | 5.2     | 22.9    | 19.6    | 5.8     | 4.8     | 13.4    | 13.4    | 7.4     | 0       | .6      | .7      | 2.8     | .4      | 135.9   | 7.6     |      |
| H or I.....                   | Fallow.....       | Fallowed.....          | 22.2    | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... |      |
|                               | do.....           | do.....                | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... |      |
|                               | do.....           | do.....                | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... |      |
|                               | do.....           | do.....                | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... | do..... |      |
| Average.....                  |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
| SPRING WHEAT                  | Wheat.....        | Spring plowed.....     | 17.3    | 14.3    | 11.3    | 2.9     | 21.3    | 4.8     | 22.2    | 26.3    | 9.3     | 10.3    | 7.5     | 17.4    | 4.3     | 6.7     | 6.8     | 1.8     | 5.3     | 0.7     | 182.2   | 10.1    |         |      |
|                               | do.....           | Fall plowed.....       | 14.0    | 10.3    | 6.2     | 4.1     | 20.7    | .8      | 12.2    | 25.8    | 3.8     | 16.2    | 0       | 11.0    | 15.3    | 4.0     | 4.2     | 3.2     | 0       | 3.3     | .5      | 141.6   | 7.9     |      |
|                               | Average.....      |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
|                               |                   |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |      |
| C or D.....                   | Fallow.....       | Fallowed.....          | 15.7    | 12.3    | 8.8     | 3.5     | 21.0    | 2.8     | 17.2    | 26.1    | 6.6     | 17.8    | 0       | 9.3     | 16.4    | 4.2     | 5.5     | 5.0     | .9      | 4.3     | .6      | 101.9   | 9.0     |      |
|                               | do.....           | do.....                | 13.7    | 18.5    | 8.5     | 4.7     | 16.0    | 5.7     | 14.2    | 33.8    | 12.3    | 16.2    | 2.3     | 12.3    | 21.3    | 2.5     | 11.3    | 8.2     | 1.3     | 13.5    | 1.0     | 203.6   | 11.3    |      |
|                               | Corn.....         | Disked.....            | 25.3    | 25.0    | 13.5    | 5.8     | 32.7    | 4.2     | 27.7    | 33.0    | 6.3     | 18.3    | 0       | 11.0    | 22.9    | 1.3     | 4.8     | 3.6     | 0       | 2.3     | .8      | 213.2   | 11.8    |      |
|                               | do.....           | Spring plowed.....     | 16.8    | 20.8    | 15.3    | 1.3     | 26.5    | 6.8     | 18.5    | 30.0    | 6.3     | 15.7    | 1.3     | 9.0     | 22.1    | 1.7     | 8.2     | 6.7     | 0       | 5.3     | .7      | 194.7   | 10.8    |      |
| Average.....                  | do.....           | Fall plowed.....       | 21.4    | 19.2    | 11.2    | 3.4     | 30.3    | 1.4     | 14.3    | 31.2    | 5.2     | 16.5    | 1.5     | 8.0     | 16.0    | 1.7     | 8.2     | 3.7     | 0       | 2.8     | .3      | 174.9   | 9.7     |      |
|                               | Oats.....         | do.....                | 20.0    | 10.6    | 4.6     | 6.7     | 18.8    | 12.2    | 13.8    | 27.0    | 4.3     | 12.7    | 0       | 14.5    | 19.3    | 7.0     | 7.7     | 6.1     | 0       | 2.3     | 0       | 156.7   | 8.7     |      |
|                               | Fallow.....       | Fallowed.....          | 15.9    | 18.2    | 15.9    | 4.8     | 25.0    | 12.2    | 30.8    | 31.5    | 13.0    | 16.0    | 4.7     | 8.8     | 22.5    | 1.2     | 9.8     | 7.7     | 1.2     | 5.7     | .3      | 229.3   | 12.7    |      |
|                               | Oats.....         | Fall plowed.....       | 18.2    | 10.9    | 8.7     | 2.9     | 23.5    | 1.1     | 12.0    | 23.0    | 6.2     | 11.2    | 0       | 3.5     | 12.5    | 5.8     | 5.5     | 4.4     | 0       | 2.2     | 0       | 130.4   | 7.7     |      |
| Average.....                  | do.....           | Spring plowed.....     | 12.0    | 14.3    | 6.3     | .3      | 20.3    | 1.0     | 21.2    | 26.5    | 1.8     | 16.0    | 0       | 3.5     | 20.4    | 1.0     | 9.8     | 9.2     | 3.8     | 5.2     | 0       | 160.6   | 8.9     |      |
|                               | Winter rye.....   | Green manured.....     | 23.1    | 14.7    | 11.7    | 3.8     | 19.2    | 1.5     | 15.3    | 28.7    | 10.8    | 13.8    | 1.3     | 7.0     | 16.4    | 1.8     | 6.2     | 3.9     | .7      | 2.5     | 0       | 150.3   | 8.9     |      |
|                               | do.....           | do.....                | 12.3    | 12.0    | 12.4    | 1.8     | 20.3    | 1.5     | 13.3    | 23.5    | 3.2     | 8.8     | 4.3     | 17.7    | 1.0     | 9.3     | 2.8     | 0       | 2.7     | 0       | 134.6   | 7.5     |         |      |



|              | Corn.....   | Green manured.....    | Disked.....           | 21.1 | 16.2 | 15.2 | 18.7 | 5.8  | 13.5 | 26.0 | 11.7 | 13.0 | 0    | 4.0  | 23.8 | 2.5  | 3.3  | 2.5  | 0    | 1.8  | 159.1 | 8.8  |
|--------------|-------------|-----------------------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|
| 31           | Corn.....   | Green manured.....    | Disked.....           | 16.0 | 10.1 | 3.8  | 20.5 | 3.9  | 11.2 | 26.2 | 6.3  | 20.8 | 0    | 5.0  | 23.8 | 1.2  | 6.0  | 1.5  | 0    | 0.2  | 138.7 | 7.7  |
| 32           | Corn.....   | Green manured.....    | Disked.....           | 9.8  | 10.1 | 7.5  | 20.5 | 5.5  | 13.0 | 25.0 | 3.0  | 4.2  | 0    | 5.5  | 13.9 | 2.2  | 6.0  | 1.5  | 0    | 0.2  | 99.3  | 5.5  |
| 41           | do.....     | do.....               | do.....               | 14.9 | 10.8 | 9.3  | 15.8 | 7.7  | 12.7 | 20.7 | 4.3  | 4.3  | 0    | 2.0  | 17.3 | 2.2  | 4.5  | 2.9  | 0    | 1.0  | 114.5 | 6.4  |
| 42           | do.....     | do.....               | do.....               | 10.3 | 9.3  | 4.0  | 14.2 | 5.5  | 15.0 | 22.3 | 0    | 8.7  | 0    | 2.3  | 16.7 | 2.2  | 4.5  | 4.0  | 0    | 1.2  | 105.2 | 5.8  |
| 58           | Oats.....   | Fall plowed.....      | Fall plowed.....      | 14.4 | 10.0 | 2.5  | 21.0 | 3.0  | 16.6 | 27.2 | 5.9  | 12.9 | .6   | 6.4  | 18.7 | 2.1  | 6.5  | 4.6  | .4   | 2.7  | 155.6 | 8.6  |
| Average..... | Wheat.....  | Subsoiled.....        | Subsoiled.....        | 20.5 | 11.2 | 5.5  | 16.0 | .5   | 9.8  | 23.7 | 1.7  | 10.3 | 0    | 6.0  | 15.3 | 1.3  | 3.3  | 3.2  | 0    | 2.5  | 112.1 | 6.2  |
| E.....       | do.....     | Fall listed.....      | Fall listed.....      | 14.4 | 9.6  | 7.1  | 17.2 | 2.1  | 14.2 | 23.7 | 5.5  | 12.7 | 0    | 5.5  | 15.8 | 1.2  | 4.7  | 3.8  | 1.7  | 4.0  | 130.4 | 7.2  |
| F.....       | do.....     | Fall plowed.....      | Fall plowed.....      | 15.7 | 10.0 | 6.5  | 14.5 | .6   | 9.7  | 22.2 | 1.0  | 11.3 | 0    | 2.3  | 19.0 | .3   | 2.3  | 3.7  | 0    | 2.0  | 105.7 | 5.9  |
| G.....       | do.....     | do.....               | do.....               | 10.3 | 10.3 | 6.4  | 15.9 | 1.1  | 11.2 | 23.2 | 2.7  | 11.4 | 0    | 4.6  | 16.7 | .9   | 3.4  | 3.6  | .6   | 2.8  | 116.1 | 6.4  |
| Average..... | Fallow..... | Fallow.....           | Fallow.....           | 18.3 | 16.8 | 8.2  | 16.8 | 7.2  | 15.3 | 27.8 | 13.2 | 12.3 | 2.7  | 4.8  | 19.5 | 1.7  | 8.2  | ---  | ---  | ---  | 129.5 | 11.8 |
| H or I.....  | do.....     | do.....               | do.....               | 10.0 | 10.3 | 10.0 | 19.3 | 8.8  | 19.0 | 23.7 | 13.3 | 14.7 | 4.0  | 2.8  | 23.7 | 1.5  | 10.8 | ---  | ---  | ---  | 141.6 | 12.9 |
| J or K.....  | do.....     | do.....               | do.....               | 11.3 | 10.3 | 10.3 | 17.7 | 9.8  | 23.8 | 32.5 | 14.5 | 12.2 | 4.0  | 5.3  | 13.3 | 2.5  | 12.0 | ---  | ---  | ---  | 152.6 | 13.9 |
| L or M.....  | do.....     | do.....               | do.....               | 11.3 | 10.3 | 10.3 | 19.5 | 10.7 | 23.0 | 35.2 | 14.0 | 11.7 | 5.7  | 4.8  | 20.3 | 3.0  | 9.8  | ---  | ---  | ---  | 157.7 | 14.3 |
| N or O.....  | do.....     | do.....               | do.....               | 18.3 | 16.8 | 8.2  | 16.8 | 7.2  | 15.3 | 27.8 | 13.2 | 12.3 | 2.7  | 4.8  | 19.5 | 1.7  | 8.2  | ---  | ---  | ---  | 129.5 | 11.8 |
| Average..... | Wheat.....  | Spalding tillage..... | Spalding tillage..... | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D T-L.....   | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| J or M.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| M or J.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D T-K.....   | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D or N.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| B or O.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| C or P.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| A or Q.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| Average..... | Wheat.....  | Ordinary plowing..... | Ordinary plowing..... | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D T-L.....   | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| J or M.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| M or J.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D T-K.....   | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| D or N.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| B or O.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| C or P.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| A or Q.....  | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| Average..... | Wheat.....  | Spring plowed.....    | Spring plowed.....    | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| 594.....     | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| 595.....     | do.....     | do.....               | do.....               | 22.5 | 17.1 | 3.5  | 22.9 | .3   | 17.1 | 25.5 | 3.5  | 16.1 | 11.9 | 4.4  | 20.5 | 2.2  | 10.2 | ---  | ---  | ---  | 145.4 | 13.2 |
| Average..... | Oats.....   | Spring plowed.....    | Spring plowed.....    | 43.6 | 21.0 | 10.9 | 4.4  | 6.6  | 39.4 | 56.9 | 9.1  | 38.1 | 0    | 24.7 | 30.0 | 10.0 | 19.7 | 16.7 | 8.4  | 3.1  | 353.0 | 19.6 |
| A.....       | do.....     | do.....               | do.....               | 38.8 | 14.1 | 8.0  | 15.9 | .6   | 36.9 | 57.2 | 7.2  | 29.7 | 0    | 32.8 | 34.9 | 14.7 | 12.2 | 9.7  | 1.9  | 5.0  | 329.3 | 18.3 |
| B.....       | do.....     | do.....               | do.....               | 17.6 | 9.5  | 10.2 | 44.4 | 3.6  | 38.2 | 57.1 | 8.2  | 33.9 | 0    | 28.8 | 37.0 | 12.4 | 16.0 | 13.2 | 5.2  | 4.1  | 341.2 | 19.0 |
| Average..... | Fallow..... | Fallow.....           | Fallow.....           | 31.9 | 27.7 | 15.0 | 59.4 | 10.9 | 42.2 | 78.1 | 25.6 | 44.7 | 8.8  | 47.2 | 59.2 | 33.1 | 40.6 | 30.6 | 18.4 | 30.0 | 784.9 | 32.5 |
| C or D.....  | Wheat.....  | Fall plowed.....      | Fall plowed.....      | 42.1 | 25.6 | 15.9 | 56.9 | 7.2  | 35.9 | 50.9 | 9.9  | 33.4 | 0    | 20.9 | 23.0 | 15.9 | 10.0 | 5.3  | 1.6  | 2.2  | 310.1 | 17.2 |
| 1.....       | do.....     | do.....               | do.....               | 30.4 | 18.3 | 14.8 | 46.9 | 10.6 | 47.5 | 56.9 | 2.2  | 28.1 | 0    | 11.6 | 45.8 | 6.6  | 18.8 | 18.8 | 8.1  | 2.2  | 365.6 | 20.3 |
| 2.....       | do.....     | do.....               | do.....               | 44.1 | 21.3 | 14.8 | 40.0 | 4.7  | 36.6 | 60.0 | 2.8  | 28.1 | 0    | 25.9 | 23.0 | 13.8 | 12.2 | 9.2  | 1.3  | 6.3  | 207.9 | 17.1 |
| 3.....       | do.....     | do.....               | do.....               | 40.0 | 21.3 | 17.2 | 40.0 | 5.9  | 44.7 | 50.9 | 19.7 | 27.8 | 0    | 13.8 | 17.7 | 18.1 | 17.5 | 23.4 | 2.2  | 9.4  | 363.1 | 20.2 |
| 4.....       | do.....     | do.....               | do.....               | 34.4 | 16.7 | 13.4 | 37.2 | 10.9 | 34.1 | 56.9 | 4.1  | 25.9 | 0    | 26.3 | 17.7 | 12.8 | 8.1  | 10.9 | 1.3  | 3.1  | 292.5 | 16.3 |
| 5.....       | do.....     | do.....               | do.....               | 42.7 | 20.8 | 10.2 | 37.2 | 6.6  | 39.1 | 57.2 | 7.8  | 28.8 | 0    | 27.8 | 17.7 | 21.6 | 12.5 | 14.2 | 1.3  | 5.6  | 337.8 | 18.8 |
| 6.....       | do.....     | do.....               | do.....               | 45.4 | 25.6 | 22.2 | 62.8 | 5.0  | 51.9 | 75.9 | 9.4  | 36.9 | 0    | 23.8 | 62.5 | 12.8 | 15.9 | 17.2 | 3.1  | 10.6 | 449.0 | 24.9 |
| 7.....       | do.....     | do.....               | do.....               | 36.4 | 28.3 | 17.5 | 62.5 | 20.6 | 46.9 | 66.9 | 20.3 | 30.3 | 3.8  | 16.6 | 36.8 | 20.0 | 21.9 | 24.8 | 8.8  | 11.3 | 458.1 | 25.5 |
| 8.....       | do.....     | do.....               | do.....               | 32.8 | 17.5 | 19.4 | 0    | 36.3 | 5.0  | 66.9 | 15.9 | 27.2 | 0    | 10.9 | 31.4 | 9.7  | 17.2 | 24.2 | 5.6  | 5.0  | 371.2 | 20.6 |
| 9.....       | do.....     | do.....               | do.....               | 45.2 | 21.3 | 22.5 | 0    | 7.8  | 56.6 | 70.0 | 15.6 | 21.9 | 0    | 9.4  | 51.6 | 13.8 | 15.6 | 12.3 | 5.3  | 11.6 | 346.6 | 19.3 |
| 20.....      | do.....     | do.....               | do.....               | 36.4 | 19.1 | 8.6  | 0    | 6.6  | 44.1 | 69.1 | 12.2 | 19.7 | 0    | 4.1  | 61.7 | 7.5  | 18.4 | 16.6 | 11.9 | 3.4  | 348.9 | 19.4 |
| 21.....      | do.....     | do.....               | do.....               | 31.0 | 17.5 | 13.1 | 0    | 40.9 | 41.6 | 70.6 | 12.2 | 19.7 | 0    | 4.1  | 61.7 | 7.5  | 18.4 | 16.6 | 11.9 | 3.4  | 348.9 | 19.4 |
| 22.....      | do.....     | do.....               | do.....               | 43.0 | 21.0 | 20.0 | 2.8  | 38.4 | 5.0  | 44.4 | 15.6 | 37.2 | 5.5  | 17.5 | 43.8 | 16.3 | 20.9 | 15.1 | 6.6  | 1.9  | 330.4 | 21.7 |
| 23.....      | do.....     | do.....               | do.....               | 40.3 | 21.9 | 18.4 | 2.7  | 38.8 | 4.7  | 47.5 | 20.9 | 32.8 | 2.2  | 23.8 | 47.8 | 16.3 | 22.8 | 21.7 | 5.3  | 9.1  | 404.6 | 22.5 |
| 24.....      | do.....     | do.....               | do.....               | 36.6 | 17.5 | 14.7 | 0    | 38.6 | 11.6 | 47.2 | 14.7 | 28.8 | 1.1  | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 25.....      | do.....     | do.....               | do.....               | 34.0 | 19.5 | 12.8 | 0    | 41.9 | 7.5  | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 26.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 27.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 28.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 29.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 30.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 31.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 32.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  | 47.2 | 71.9 | 20.6 | 19.4 | 0    | 6.3  | 61.7 | 12.5 | 16.0 | 11.3 | 7.5  | 3.3  | 358.7 | 19.9 |
| 33.....      | do.....     | do.....               | do.....               | 35.6 | 13.0 | 5.2  | 3.9  | 7.5  |      |      |      |      |      |      |      |      |      |      |      |      |       |      |



CROP YIELDS AT THE AKRON (COLO.) FIELD STATION—Continued

TABLE 64.—Annual acre yields of specified crops grown in rotations on individual plots at Akron, Colo., in one or more years from 1903 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method   | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| OATS—continued                |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 35                            | Milo          | Disks            | 39.5  | 13.8  | 11.3  | 0     | 42.8  | 4.7   | 39.7  | 67.8  | 8.1   | 24.4  | 0     | 1.3   | 37.5  | 3.8   | 12.2  | 10.7  | 3.1   | 5.0   | .9    | 287.1  | 16.0    |
| 37                            | Peas          | Green manured    | 42.2  | 22.0  | 11.9  | 0     | 38.4  | 1.3   | 38.1  | 69.1  | 8.1   | 20.0  | 0     | 11.9  | 56.3  | 17.8  | 18.1  | 11.9  | 3.4   | 3.8   | .3    | 332.4  | 18.5    |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| E                             | Oats          | Subsided         | 37.3  | 16.1  | 11.3  | 8.4   | 35.3  | 0     | 30.3  | 57.5  | 4.1   | 28.4  | 0     | 30.0  | 50.9  | 19.1  | 6.6   | 12.8  | 1.6   | 3.8   | 1.6   | 317.8  | 17.7    |
| F                             | do            | Fall listed      | 38.0  | 15.6  | 11.1  | 5.3   | 54.7  | 3.6   | 40.9  | 50.0  | 13.1  | 31.3  | 1.3   | 25.3  | 35.9  | 10.3  | 5.9   | 13.8  | 11.3  | 10.3  | 1.3   | 341.0  | 18.9    |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| CORN TOTAL                    |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Corn          | Spring plowed    | 4,250 | 6,800 | 3,350 | 1,300 | 5,040 | 3,000 | 3,170 | 3,000 | 1,930 | 3,630 | 3,380 | 1,400 | 4,640 | 1,330 | 2,100 | 2,700 | 1,110 | 1,000 | 2,000 | 50,880 | 2,827   |
| B                             | do            | Fall plowed      | 3,360 | 5,800 | 2,920 | 1,040 | 6,560 | 2,550 | 3,510 | 3,800 | 1,460 | 3,550 | 3,050 | 1,750 | 5,270 | 710   | 1,880 | 3,050 | 1,090 | 800   | 2,300 | 51,690 | 2,838   |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| C or D                        | Fallow        | Fallow           | 3,620 | 4,940 | 2,850 | 2,620 | 5,020 | 3,400 | 3,700 | 2,500 | 2,380 | 4,230 | 6,500 | 1,100 | 5,590 | 2,260 | 3,750 | 5,250 | 2,200 | 2,500 | 3,300 | 64,090 | 3,561   |
| 1                             | Oats          | Fall plowed      | 1,800 | 4,600 | 2,200 | 2,240 | 4,640 | 1,900 | 3,680 | 4,600 | 900   | 2,900 | 3,200 | 2,250 | 4,880 | 750   | 2,570 | 3,200 | 320   | 700   | 3,850 | 49,580 | 2,754   |
| 2                             | do            | Spring plowed    | 3,130 | 4,050 | 1,700 | 1,280 | 4,800 | 2,250 | 3,600 | 4,260 | 1,580 | 3,120 | 4,650 | 1,040 | 5,005 | 1,320 | 2,870 | 3,200 | 1,350 | 900   | 2,700 | 47,645 | 2,647   |
| 3                             | Wheat         | Fall plowed      | 1,300 | 4,200 | 1,700 | 1,220 | 3,150 | 1,450 | 3,100 | 4,920 | 800   | 3,350 | 2,600 | 2,430 | 4,905 | 1,950 | 2,620 | 3,400 | 1,770 | 550   | 3,400 | 47,215 | 2,623   |
| 4                             | do            | do               | 1,300 | 4,000 | 1,600 | 850   | 4,400 | 850   | 2,550 | 3,900 | 850   | 3,050 | 2,850 | 1,910 | 4,905 | 1,950 | 2,620 | 3,350 | 1,120 | 800   | 3,400 | 47,105 | 2,617   |
| 6                             | Oats          | Spring plowed    | 3,000 | 4,550 | 2,450 | 1,450 | 4,800 | 2,350 | 3,030 | 4,050 | 900   | 3,050 | 3,700 | 1,410 | 4,945 | 1,270 | 2,815 | 3,600 | 700   | 750   | 3,150 | 46,905 | 2,607   |
| 7                             | Wheat         | do               | 3,710 | 4,050 | 2,400 | 1,800 | 4,820 | 2,800 | 3,800 | 4,050 | 800   | 3,850 | 3,000 | 1,410 | 4,800 | 1,710 | 2,940 | 3,400 | 1,630 | 850   | 3,300 | 52,865 | 2,837   |
| 9                             | Wheat         | Fall plowed      | 2,070 | 3,200 | 1,300 | 1,200 | 4,350 | 1,200 | 2,260 | 3,520 | 730   | 2,800 | 3,000 | 1,650 | 4,800 | 1,850 | 2,370 | 3,000 | 1,900 | 430   | 2,000 | 45,860 | 2,804   |
| 20                            | Oats          | do               | 2,040 | 2,900 | 1,340 | 1,200 | 4,350 | 1,200 | 2,260 | 3,520 | 730   | 2,800 | 3,000 | 1,650 | 4,800 | 1,850 | 2,370 | 3,000 | 1,900 | 430   | 2,000 | 45,860 | 2,804   |
| 28                            | Wheat         | do               | 2,310 | 3,800 | 2,080 | 1,550 | 4,040 | 2,600 | 3,580 | 4,000 | 930   | 3,580 | 3,250 | 1,900 | 4,800 | 1,850 | 2,370 | 3,000 | 1,900 | 430   | 2,000 | 45,860 | 2,804   |
| 30                            | do            | do               | 2,210 | 3,300 | 2,080 | 1,550 | 4,040 | 2,600 | 3,580 | 4,000 | 930   | 3,250 | 3,250 | 1,900 | 4,800 | 1,850 | 2,370 | 3,000 | 1,900 | 430   | 2,000 | 45,860 | 2,804   |
| 31                            | Oats          | Spring plowed    | 2,400 | 4,450 | 2,080 | 1,600 | 4,370 | 2,300 | 3,380 | 3,900 | 930   | 3,250 | 3,250 | 1,900 | 4,800 | 1,850 | 2,370 | 3,000 | 1,900 | 430   | 2,000 | 45,860 | 2,804   |
| 32                            | Wheat         | do               | 3,360 | 3,650 | 2,960 | 750   | 4,410 | 2,300 | 2,630 | 4,220 | 600   | 3,510 | 4,200 | 1,900 | 4,145 | 1,150 | 2,130 | 3,600 | 1,730 | 550   | 2,400 | 46,365 | 2,827   |
| 39                            | Oats          | do               | 2,200 | 4,700 | 2,360 | 480   | 4,650 | 2,300 | 2,900 | 4,580 | 300   | 2,850 | 2,500 | 1,900 | 4,100 | 1,100 | 2,130 | 3,600 | 1,730 | 550   | 2,400 | 46,365 | 2,827   |
| 42                            | do            | do               | 2,840 | 5,250 | 1,920 | 600   | 4,110 | 900   | 2,520 | 3,400 | 630   | 2,440 | 2,550 | 1,750 | 5,775 | 1,600 | 2,125 | 3,750 | 1,850 | 700   | 1,850 | 41,715 | 2,718   |
| 51                            | Wheat         | Fall plowed      | 4,160 | 3,900 | 1,920 | 500   | 3,190 | 2,520 | 2,230 | 3,400 | 630   | 2,440 | 2,550 | 1,750 | 5,775 | 1,600 | 2,125 | 3,750 | 1,850 | 700   | 1,850 | 41,715 | 2,718   |
| 81                            | Oats          | do               | 1,300 | 5,000 | 2,400 | 280   | 3,880 | 1,000 | 3,320 | 3,800 | 800   | 2,780 | 2,800 | 1,650 | 4,145 | 1,680 | 2,670 | 4,000 | 1,000 | 600   | 2,400 | 40,450 | 2,705   |
| 91                            | Wheat         | do               | 2,060 | 4,450 | 2,100 | 950   | 4,360 | 1,800 | 2,450 | 3,750 | 700   | 2,780 | 2,800 | 1,650 | 4,145 | 1,680 | 2,670 | 4,000 | 1,000 | 600   | 2,400 | 40,450 | 2,705   |
| 92                            | do            | Spring plowed    | 3,050 | 4,000 | 2,130 | 1,020 | 4,940 | 1,900 | 2,800 | 3,400 | 550   | 2,970 | 3,100 | 1,650 | 5,270 | 1,790 | 2,830 | 4,350 | 1,370 | 800   | 2,600 | 48,690 | 2,705   |
| 139                           | Oats          | Fall plowed      | 3,570 | 4,400 | 2,500 | 630   | 5,040 | 1,850 | 2,600 | 3,700 | 900   | 2,440 | 1,900 | 1,800 | 4,505 | 1,350 | 3,400 | 3,400 | 1,370 | 650   | 2,000 | 42,315 | 2,705   |
| 251                           | Wheat         | Spring plowed    |       |       |       |       |       |       |       | 2,300 | 150   |       |       | 1,600 | 4,355 | 1,750 | 2,310 | 1,450 | 2,050 | 1,270 | 1,600 | 11,415 | 1,310   |
| 252                           | do            | do               |       |       |       |       |       |       |       | 2,300 | 150   |       |       | 1,600 | 4,355 | 1,750 | 2,310 | 1,450 | 2,050 | 1,270 | 1,600 | 11,415 | 1,310   |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| E                             | Corn          | Subsided         | 2,560 | 5,600 | 2,132 | 1,355 | 4,655 | 1,362 | 2,644 | 3,966 | 760   | 2,948 | 2,728 | 1,602 | 4,645 | 1,336 | 2,400 | 3,561 | 1,213 | 677   | 2,692 | 40,508 | 2,423   |
| F                             | do            | Fall listed      | 2,700 | 5,800 | 2,380 | 1,180 | 5,220 | 1,600 | 2,930 | 3,050 | 1,240 | 2,800 | 4,400 | 1,600 | 5,065 | 670   | 1,990 | 3,250 | 870   | 900   | 1,050 | 46,755 | 2,708   |
| G                             | do            | do               | 3,680 | 6,540 | 2,020 | 980   | 2,950 | 2,100 | 2,010 | 2,820 | 730   | 1,210 | 4,690 | 2,000 | 3,980 | 1,120 | 2,600 | 2,400 | 680   | 550   | 1,300 | 40,640 | 2,258   |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| D-T-F                         | Corn          | Spading tillage  |       |       |       | 1,000 | 6,220 | 2,320 | 3,940 | 4,840 | 1,360 | 3,400 |       |       |       |       |       |       |       |       |       | 22,080 | 3,080   |
| H or E                        | do            | do               |       |       |       | 864   | 5,650 | 2,320 | 3,640 | 4,630 | 1,600 | 3,760 |       |       |       |       |       |       |       |       |       | 20,600 | 3,433   |
| E or H                        | do            | do               |       |       |       | 432   | 5,740 | 1,960 | 4,160 | 4,680 | 1,400 | 3,690 |       |       |       |       |       |       |       |       |       | 21,300 | 3,565   |
| D-T-G                         | Wheat         | Ordinary plowing |       |       |       | 720   | 6,790 | 2,120 | 3,660 | 5,040 | 1,400 | 3,800 |       |       |       |       |       |       |       |       |       | 22,970 | 3,817   |
| N or D                        | do            | Spading tillage  |       |       |       | 1,456 | 4,510 | 2,100 | 3,460 | 4,440 | 1,400 | 3,680 |       |       |       |       |       |       |       |       |       | 19,020 | 3,270   |
| P or C                        | do            | do               |       |       |       | 3,456 | 5,480 | 2,760 | 3,180 | 3,840 | 1,450 | 4,560 |       |       |       |       |       |       |       |       |       | 21,800 | 3,550   |
| Q or A                        | do            | do               |       |       |       | 1,904 | 2,920 | 2,090 | 4,340 | 1,520 | 1,520 | 4,280 |       |       |       |       |       |       |       |       |       | 18,170 | 3,028   |
| D-T-F                         | Corn          | Ordinary plowing |       |       |       | 1,904 | 4,220 | 2,810 | 2,650 | 4,800 | 1,040 | 4,120 |       |       |       |       |       |       |       |       |       | 19,640 | 3,273   |
| H or E                        | do            | Dynamited        |       |       |       | 0     | 3,140 | 0     | 3,140 |       |       |       |       |       |       |       |       |       |       |       |       | 3,140  | 3,140   |
| E or H                        | do            | do               |       |       |       | 0     | 3,130 | 0     | 3,130 |       |       |       |       |       |       |       |       |       |       |       |       | 3,130  | 3,130   |
| D-T-G                         | do            | do               |       |       |       | 0     | 4,000 | 0     | 4,000 |       |       |       |       |       |       |       |       |       |       |       |       | 4,000  | 4,000   |
| N or D                        | do            | do               |       |       |       | 0     | 2,200 | 0     | 2,200 |       |       |       |       |       |       |       |       |       |       |       |       | 2,200  | 2,200   |
| P or C                        | Wheat         | Ordinary plowing |       |       |       | 0     | 3,270 | 0     | 3,270 |       |       |       |       |       |       |       |       |       |       |       |       | 3,270  | 3,270   |
| Q or A                        | do            | Dynamited        |       |       |       | 0     | 3,460 | 0     | 3,460 |       |       |       |       |       |       |       |       |       |       |       |       | 3,460  | 3,460   |
| O or B                        | do            | do               |       |       |       | 0     | 2,400 | 0     | 2,400 |       |       |       |       |       |       |       |       |       |       |       |       | 2,400  | 2,400   |
| Q or A                        | do            | do               |       |       |       | 0     | 3,140 | 0     | 3,140 |       |       |       |       |       |       |       |       |       |       |       |       | 3,140  | 3,140   |
| Average                       |               |                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |



| CORN GRAIN |  | 1890 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1891 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1892 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1893 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1894 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1895 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1896 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1897 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1898 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1899 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1900 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1901 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1902 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1903 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1904 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1905 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1906 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1907 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1908 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1909 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1910 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1911 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1912 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1913 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1914 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1915 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1916 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1917 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1918 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1919 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1920 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1921 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1922 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1923 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1924 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1925 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1926 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1927 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1928 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1929 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1930 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1931 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1932 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1933 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1934 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1935 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1936 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1937 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1938 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1939 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1940 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1941 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1942 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1943 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1944 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1945 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1946 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1947 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1948 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1949 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1950 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1951 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1952 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1953 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1954 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1955 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1956 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1957 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1958 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1959 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1962 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1963 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1964 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1965 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1966 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1967 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1968 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1969 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1972 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1976 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1977 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1978 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1979 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1981 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1982 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1983 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1984 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1987 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1988 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1990 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1991 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1992 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1993 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1994 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1995 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1996 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1997 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1998 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1999 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2000 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2001 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2002 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2003 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2004 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2005 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2007 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2008 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2009 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2010 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2011 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2012 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2013 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2014 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2015 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2016 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2017 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2018 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2019 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2020 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2021 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2022 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2023 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2024 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2025 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2026 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2027 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2028 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2029 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2030 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2031 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2032 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2033 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2034 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2035 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2036 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2037 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2038 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2039 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2040 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2041 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2042 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2043 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2044 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2045 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2046 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2047 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2048 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2049 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2050 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2051 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2052 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2053 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2054 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2055 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2056 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2057 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2058 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2059 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2060 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2061 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2062 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2063 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2064 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2065 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2066 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2067 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2068 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2069 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2070 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2071 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2072 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2073 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2074 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2075 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2076 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2077 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2078 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2079 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2080 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2081 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2082 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2083 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2084 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2085 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2086 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2087 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2088 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2089 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2090 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2091 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2092 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2093 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2094 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2095 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2096 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2097 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2098 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2099 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2100 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2101 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2102 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2103 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2104 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2105 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2106 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2107 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2108 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2109 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2110 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2111 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2112 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2113 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2114 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2115 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2116 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2117 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2118 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2119 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2120 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2121 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2122 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2123 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2124 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2125 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2126 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2127 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2128 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2129 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2130 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2131 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2132 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2133 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2134 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2135 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2136 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2137 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2138 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2139 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2140 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2141 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2142 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2143 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2144 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2145 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2146 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2147 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2148 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2149 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2150 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2151 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2152 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2153 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2154 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2155 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2156 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2157 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2158 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2159 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2160 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2161 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2162 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2163 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2164 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2165 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2166 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2167 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2168 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2169 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2170 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2171 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2172 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2173 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2174 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2175 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2176 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2177 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2178 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2179 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2180 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2181 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2182 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2183 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2184 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2185 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2186 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2187 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2188 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2189 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2190 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2191 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2192 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2193 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2194 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2195 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2196 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2197 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2198 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2199 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2200 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2201 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2202 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2203 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2204 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2205 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2206 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2207 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2208 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2209 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2210 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2211 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2212 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2213 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2214 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2215 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2216 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2217 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2218 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2219 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2220 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2221 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2222 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2223 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2224 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2225 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2226 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2227 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2228 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2229 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2230 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2231 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2232 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2233 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2234 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2235 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2236 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2237 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2238 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2239 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2240 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2241 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2242 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2243 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2244 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2245 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2246 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2247 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2248 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2249 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2250 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2251 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2252 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2253 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2254 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2255 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2256 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2257 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2258 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2259 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2260 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2261 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2262 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2263 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2264 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2265 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2266 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2267 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2268 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2269 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2270 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2271 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2272 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2273 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2274 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2275 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2276 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2277 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2278 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2279 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2280 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2281 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2282 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2283 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2284 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2285 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2286 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2287 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2288 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2289 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2290 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2291 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2292 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2293 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2294 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2295 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2296 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2297 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2298 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2299 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2300 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2301 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2302 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2303 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2304 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2305 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2306 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2307 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2308 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2309 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2310 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2311 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2312 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2313 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2314 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2315 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2316 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2317 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2318 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2319 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2320 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2321 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2322 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2323 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2324 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2325 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2326 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2327 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2328 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2329 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2330 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2331 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2332 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2333 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2334 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2335 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2336 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2337 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2338 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2339 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2340 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2341 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2342 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2343 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2344 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2345 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2346 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2347 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2348 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2349 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2350 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2351 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2352 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2353 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2354 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2355 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2356 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2357 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2358 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2359 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2360 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2361 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2362 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2363 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2364 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2365 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2366 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2367 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2368 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2369 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2370 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2371 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2372 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2373 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2374 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2375 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2376 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2377 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2378 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2379 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2380 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2381 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2382 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2383 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2384 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2385 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2386 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2387 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2388 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2389 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2390 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2391 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2392 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2393 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2394 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2395 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2396 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2397 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2398 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2399 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2400 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2401 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2402 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2403 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2404 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2405 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2406 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2407 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2408 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2409 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2410 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2411 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2412 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2413 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2414 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2415 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2416 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2417 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2418 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2419 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2420 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2421 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2422 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2423 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2424 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2425 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2426 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2427 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2428 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2429 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2430 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2431 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2432 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2433 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2434 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2435 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2436 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2437 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2438 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2439 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2440 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2441 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2442 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2443 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2444 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2445 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2446 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2447 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2448 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2449 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2450 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2451 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2452 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2453 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2454 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2455 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2456 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2457 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2458 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2459 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2460 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2461 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2462 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2463 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2464 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2465 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2466 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2467 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2468 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2469 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2470 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2471 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2472 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2473 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2474 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2475 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2476 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2477 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2478 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2479 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2480 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2481 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2482 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2483 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2484 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2485 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2486 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2487 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2488 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2489 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2490 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2491 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2492 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2493 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2494 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2495 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2496 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2497 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2498 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2499 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2500 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2501 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2502 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2503 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2504 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2505 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2506 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2507 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2508 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2509 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2510 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2511 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2512 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2513 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2514 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2515 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2516 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2517 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2518 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2519 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2520 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2521 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2522 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2523 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2524 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2525 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2526 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2527 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2528 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2529 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2530 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2531 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2532 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2533 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2534 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2535 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2536 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2537 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2538 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2539 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2540 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2541 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2542 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2543 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2544 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2545 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2546 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2547 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2548 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2549 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2550 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2551 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2552 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2553 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2554 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2555 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2556 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2557 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2558 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2559 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2560 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2561 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2562 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2563 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2564 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2565 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2566 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2567 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2568 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2569 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2570 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2571 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2572 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2573 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2574 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2575 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2576 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2577 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2578 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2579 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2580 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2581 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2582 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2583 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2584 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2585 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2586 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2587 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2588 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2589 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2590 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2591 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2592 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2593 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2594 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2595 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2596 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2597 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2598 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2599 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2600 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2601 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2602 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2603 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2604 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2605 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2606 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2607 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2608 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2609 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2610 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2611 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2612 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2613 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2614 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2615 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2616 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2617 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2618 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2619 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2620 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2621 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2622 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2623 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2624 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2625 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2626 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2627 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2628 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2629 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2630 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2631 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2632 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2633 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2634 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2635 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2636 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2637 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2638 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2639 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2640 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2641 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2642 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2643 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2644 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2645 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2646 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2647 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2648 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2649 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2650 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2651 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2652 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2653 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2654 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2655 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2656 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2657 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2658 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2659 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2660 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2661 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2662 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2663 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2664 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2665 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2666 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2667 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2668 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2669 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2670 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2671 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2672 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2673 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2674 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2675 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2676 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2677 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2678 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2679 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2680 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2681 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2682 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2683 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2684 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2685 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2686 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2687 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2688 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2689 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2690 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2691 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2692 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2693 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2694 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2695 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2696 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2697 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2698 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2699 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2700 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2701 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2702 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2703 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2704 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2705 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2706 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2707 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2708 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2709 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2710 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2711 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2712 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2713 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2714 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2715 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2716 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2717 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2718 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2719 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2720 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2721 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2722 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2723 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2724 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2725 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2726 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2727 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2728 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2729 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2730 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2731 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2732 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2733 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2734 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2735 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2736 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2737 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2738 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2739 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2740 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2741 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2742 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2743 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2744 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2745 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2746 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2747 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2748 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2749 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2750 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2751 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2752 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2753 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2754 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2755 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2756 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2757 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2758 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2759 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2760 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2761 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2762 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2763 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2764 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2765 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2766 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2767 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2768 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2769 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2770 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2771 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2772 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2773 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2774 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2775 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2776 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2777 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2778 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2779 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2780 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2781 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2782 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2783 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2784 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2785 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2786 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2787 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2788 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2789 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2790 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2791 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2792 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2793 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2794 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2795 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2796 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2797 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2798 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2799 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2800 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2801 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2802 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2803 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## CROP YIELDS AT THE AKRON (COLO.) FIELD STATION—Continued

TABLE 64.—Annual acre yields of specified crops grown in rotations on individual plots at Akron, Colo., in one or more years from 1908 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1908 | 1909 | 1910 | 1911 | 1912  | 1913  | 1914  | 1915  | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|---------------|----------------|------|------|------|------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| 41<br>BROMEGRASS              | Wheat         | Fall plowed    |      | 0    | 100  | 20   | 1,060 | 420   | 0     | 2,270 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 3,870 | 215     |
|                               | Brome-grass   |                |      | 0    | 620  | 35   | 780   | 700   | 2,000 | 1,730 | 0    | 320  | 240  | 0    | 0    | 0    | 590  | 0    | 0    | 0    | 0    | 7,015 | 390     |
|                               | do.           |                |      | 0    | 300  | 25   | 760   | 320   | 1,920 | 1,090 | 0    | 620  | 140  | 0    | 0    | 0    | 460  | 0    | 0    | 0    | 0    | 5,635 | 352     |
| Average                       |               |                |      | 0    | 340  | 27   | 867   | 480   | 1,307 | 1,697 | 0    | 313  | 127  | 0    | 0    | 0    | 350  | 0    | 0    | 0    | 0    | 5,507 | 319     |
| 42<br>ALFALFA                 | Wheat         | Fall plowed    | 780  | 650  | 250  | 75   | 1,230 | 240   | 0     | 1,810 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1,810 | 1,810   |
|                               | Alfalfa       |                | 800  | 400  | 100  | 105  | 1,020 | 1,200 | 2,060 | 2,180 | 0    | 0    | 400  | 0    | 0    | 0    | 600  | 0    | 0    | 0    | 0    | 5,855 | 326     |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      | 8,065 | 448     |
| Average                       |               |                |      | 525  | 175  | 90   | 1,125 | 720   | 1,030 | 3,705 | 0    | 0    | 200  | 0    | 0    | 0    | 300  | 0    | 0    | 0    | 0    | 5,247 | 861     |
| A<br>SORGO                    | Sorgo         | Spring plowed  |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           | Fall plowed    |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average                       |               |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| F<br>WINTER WHEAT             | Wheat         | Spring plowed  |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           | Fall plowed    |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average                       |               |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 24<br>MILO                    | Milo          | Spring plowed  |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           | Fall plowed    |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average                       |               |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 24<br>KAFFIR                  | Kafir         | Spring plowed  |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           | Fall plowed    |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average                       |               |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 22<br>KAFFIR                  | Kafir         | Spring plowed  |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           | Fall plowed    |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | do.           |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| Average                       |               |                |      |      |      |      |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |

\* Calculated on the basis of 2 rows.



## CROP YIELDS AT THE COLBY (KANS.) FIELD STATION

TABLE 65.—Annual acre yields of specified crops grown in rotations on individual plots at Colby, Kans., in one or more years from 1914 to 1926

[For descriptions of rotations, see pages 32-43. For climatic conditions 1914 to 1924, see Figure 30 (p. 46) Miscellaneous Circular No. 81. Yields of total weight of corn, alfalfa, sorgo, and kafir are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |      |
|-------------------------------|---------------|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|------|
| WINTER WHEAT                  |               |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |      |
| A                             | Winter wheat  | Late fall plowed  | 14.2 | 9.3  | 9.0  | 0    | 11.2 | 25.8 | 20.0 | 23.8 | 12.4 | 10.0 | 10.5 | 5.2  | 1.7  | 138.9 | 11.6    |      |
| B                             | do            | Early fall plowed | 13.9 | 18.7 | 18.5 | 0    | 5.3  | 7.5  | 15.0 | 13.2 | 15.3 | 5.0  | 8.5  | 5.5  | 1.3  | 113.8 | 9.5     |      |
| Average                       |               |                   |      | 14.0 | 13.8 | 0    | 8.3  | 16.7 | 17.5 | 18.5 | 13.9 | 7.5  | 9.5  | 5.4  | 1.5  | 126.4 | 10.6    |      |
| C or D                        | Fallow        | Fallowed          | 10.0 | 19.5 | 26.0 | 0    | 8.3  | 13.7 | 31.7 | 25.2 | 18.2 | 1.8  | 31.8 | 27.8 | 13.3 | 217.3 | 18.1    |      |
| H or I                        | do            | do                | 8.9  | 17.5 | 24.2 | 0    | 15.0 | 24.0 | 42.7 | 19.5 | 32.5 | 1.5  | 33.5 | 21.3 | 6.5  | 233.2 | 19.9    |      |
| J or K                        | do            | do                | 8.7  | 17.0 | 24.8 | 0    | 22.5 | 21.8 | 43.2 | 27.5 | 31.8 | 1.7  | 47.5 | 19.2 | 9.5  | 266.5 | 22.2    |      |
| L or M                        | do            | do                | 10.3 | 18.5 | 25.8 | 0    | 21.0 | 28.8 | 38.3 | 35.8 | 25.3 | 1.0  | 39.9 | 24.0 | 8.8  | 267.2 | 22.2    |      |
| N or O                        | do            | do                | 8.8  | 15.5 | 27.7 | 0    | 24.0 | 36.7 | 40.3 | 38.2 | 16.6 | 2.2  | 33.3 | 11.5 | 7.3  | 253.3 | 21.1    |      |
| P or Q                        | do            | do                | 10.7 | 17.0 | 25.7 | 0    | 14.2 | 23.3 | 40.7 | 27.2 | 31.3 | 2.5  | 37.8 | 23.3 | 14.3 | 257.3 | 21.1    |      |
| Average                       |               |                   |      | 17.5 | 25.7 | 0    | 17.5 | 24.7 | 39.5 | 28.9 | 26.0 | 1.8  | 37.3 | 21.2 | 10.0 | 250.0 | 20.8    |      |
| 151                           | Fallow        | Fallowed          | 10.8 | 22.5 | 25.0 | 0    | 18.0 | 24.0 | 41.2 | 35.8 | 33.6 | 4.8  | 23.9 | 20.8 | 12.7 | 262.3 | 21.9    |      |
| 152                           | Corn          | Disked            | 12.8 | 16.7 | 16.7 | 0    | 6.5  | 17.0 | 30.5 | 12.5 | 16.6 | 6.3  | 15.6 | 11.5 | 4.0  | 153.9 | 12.8    |      |
| 153                           | Winter rye    | Green manured     | 11.1 | 22.7 | 23.3 | 0    | 20.7 | 30.7 | 27.7 | 31.2 | 30.3 | 8.2  | 21.4 | 12.5 | 17.2 | 245.9 | 20.5    |      |
| 154                           | Fallow        | Fallowed          | 11.9 | 19.0 | 23.3 | 0    | 21.8 | 25.7 | 40.0 | 17.0 | 31.1 | 3.8  | 24.3 | 20.5 | 13.8 | 240.3 | 20.0    |      |
| 155                           | do            | do                | 11.3 | 21.0 | 21.7 | 0    | 17.7 | 31.0 | 33.7 | 19.2 | 34.5 | 3.0  | 16.2 | 19.5 | 22.7 | 240.2 | 20.0    |      |
| 156                           | do            | do                | 11.3 | 23.2 | 22.3 | 0    | 18.8 | 27.0 | 35.7 | 19.5 | 32.8 | 2.0  | 18.3 | 16.5 | 26.2 | 242.3 | 20.2    |      |
| 257                           | Milo          | Disked            |      |      | 2.5  | 0    | 6.5  | 31.3 | 16.0 | 12.3 | 7.8  | 10.8 | 7.3  | 21.7 | 1.3  | 115.0 | 11.5    |      |
| 259                           | Pinto beans   | do                |      |      |      |      |      | 14.6 | 18.8 | 23.7 | 17.5 | 10.7 | 16.3 | 12.3 | 2.0  | 101.3 | 14.5    |      |
| 406                           | Winter wheat  | Fall plowed       |      |      |      |      |      | 15.1 | 14.8 | 9.6  | 14.4 | 7.8  | 10.6 | 7.5  | 1.3  | 66.0  | 9.4     |      |
|                               | Barley        | Fall listed       |      |      |      |      |      | 14.7 | 14.5 | 8.7  | 14.3 | 6.3  | 12.7 | 6.7  | .7   | 63.9  | 9.1     |      |
| 407                           | Winter wheat  | do                |      |      |      |      |      | 14.5 | 14.3 | 11.1 | 16.1 | 6.8  | 8.1  | 5.7  | 3.3  | 65.4  | 9.3     |      |
|                               | Barley        | Fall plowed       |      |      |      |      |      | 15.2 | 14.2 | 8.2  | 12.2 | 6.8  | 14.0 | 2.7  | 1.0  | 59.1  | 8.4     |      |
| 501                           | Fallow        | Fallowed          | 12.2 | 25.3 | 19.3 | 0    | 19.0 | 35.3 | 44.7 | 40.8 | 18.3 | 4.3  | 32.8 | 21.0 | 15.2 | 276.0 | 23.0    |      |
| 502                           | do            | do                | 12.2 | 27.8 | 23.0 | 0    | 16.8 | 36.0 | 43.2 | 37.7 | 20.4 | 3.0  | 28.8 | 18.3 | 11.0 | 266.0 | 22.2    |      |
| 503                           | do            | do                | 13.5 | 29.3 | 20.7 | 0    | 17.3 | 40.3 | 46.5 | 36.7 | 20.6 | 3.8  | 27.5 | 19.3 | 15.7 | 277.7 | 23.1    |      |
| 504                           | do            | do                | 12.4 | 29.5 | 22.7 | 0    | 18.8 | 35.8 | 45.5 | 33.8 | 21.1 | 3.5  | 29.1 | 19.7 | 14.8 | 274.3 | 22.9    |      |
| 505                           | do            | do                | 14.1 | 29.3 | 23.3 | 0    | 20.8 | 52.2 | 43.2 | 35.1 | 24.9 | 3.5  | 25.7 | 23.7 | 20.3 | 302.0 | 25.2    |      |
| 506                           | do            | do                | 11.6 | 31.7 | 21.2 | 0    | 20.2 | 42.5 | 43.2 | 37.8 | 25.3 | 4.0  | 31.7 | 25.0 | 13.5 | 296.1 | 24.7    |      |
| 507                           | do            | do                | 10.3 | 27.0 | 19.0 | 0    | 16.8 | 37.0 | 40.0 | 20.2 | 23.5 | 4.0  | 24.5 | 23.7 | 13.3 | 249.0 | 20.8    |      |
| 508                           | do            | do                | 10.9 | 15.0 | 19.5 | 0    | 10.8 | 30.8 | 41.7 | 5.6  | 22.8 | 3.3  | 17.2 | 22.5 | 21.0 | 210.2 | 17.5    |      |
| 509                           | do            | do                | 10.9 | 15.2 | 21.8 | 0    | 19.8 | 28.2 | 44.5 | 21.3 | 26.8 | 4.3  | 22.3 | 27.0 | 28.3 | 259.5 | 21.6    |      |
| 510                           | do            | do                | 13.0 | 23.8 | 21.7 | 0    | 21.8 | 41.3 | 38.8 | 28.7 | 30.8 | 4.2  | 23.8 | 28.7 | 25.7 | 289.3 | 24.1    |      |
| 551                           | do            | do                | 13.3 | 35.7 | 23.0 | 0    | 26.0 | 44.7 | 38.8 | 42.8 | 30.4 | 3.2  | 34.5 | 28.7 | 26.7 | 334.5 | 27.9    |      |
| 552                           | do            | do                | 10.7 | 32.2 | 22.2 | 0    | 21.0 | 36.0 | 33.0 | 19.0 | 29.2 | 3.8  | 24.9 | 27.0 | 28.5 | 276.8 | 23.1    |      |
| 553                           | do            | do                | 12.2 | 31.0 | 21.0 | 0    | 20.7 | 37.0 | 37.8 | 36.0 | 28.9 | 6.3  | 27.8 | 20.5 | 23.7 | 290.7 | 24.2    |      |
| 554                           | do            | do                | 11.7 | 34.5 | 22.7 | 0    | 29.2 | 40.0 | 28.7 | 22.2 | 33.2 | 4.8  | 33.4 | 25.2 | 23.0 | 296.9 | 24.7    |      |
| 555                           | do            | do                | 12.8 | 39.5 | 21.8 | 0    | 26.7 | 39.8 | 26.8 | 36.1 | 31.7 | 4.0  | 28.7 | 32.5 | 26.3 | 313.9 | 26.2    |      |
| 556                           | do            | do                | 10.3 | 35.8 | 22.3 | 0    | 24.5 | 33.3 | 27.2 | 40.5 | 29.1 | 4.3  | 27.4 | 28.7 | 27.8 | 300.9 | 25.1    |      |
| 557                           | do            | do                | 13.2 | 35.5 | 21.7 | 0    | 20.7 | 32.2 | 32.8 | 30.2 | 25.9 | 8.3  | 25.3 | 22.8 | 28.2 | 283.6 | 23.6    |      |
| 558                           | do            | do                | 13.8 | 33.8 | 22.8 | 0    | 21.7 | 35.7 | 33.3 | 35.5 | 26.9 | 5.3  | 25.9 | 24.0 | 24.0 | 288.9 | 24.1    |      |
| 559                           | do            | do                | 15.7 | 32.8 | 22.5 | 0    | 18.7 | 37.5 | 33.0 | 27.5 | 27.3 | 2.8  | 22.8 | 22.0 | 24.7 | 271.6 | 22.6    |      |
| 560                           | do            | do                | 15.0 | 31.5 | 22.5 | 0    | 21.3 | 26.7 | 34.2 | 25.0 | 22.6 | 3.5  | 24.3 | 20.8 | 24.2 | 256.6 | 21.4    |      |
| 574                           | Winter wheat  | Fall plowed       |      |      |      |      |      | 13.2 | 16.2 | 15.3 | 13.5 | 17.4 | 9.7  | 16.3 | 8.2  | 3.0   | 112.8   | 11.3 |
|                               | do            | Stubble in        |      |      |      |      |      | 2.2  | 22.2 | 24.2 | 11.2 | 10.6 | 14.3 | 4.5  | 6.3  | 1.5   | 97.0    | 9.7  |
|                               | Corn          | Disked            |      |      |      |      |      | 5.5  | 21.2 | 20.0 | 10.7 | 9.6  | 7.7  | 12.2 | 14.3 | 1.2   | 102.4   | 10.2 |
| 575                           | Winter wheat  | Fall plowed       |      |      |      |      |      | 10.5 | 10.5 | 15.2 | 14.0 | 14.4 | 9.2  | 11.3 | 5.0  | 2.8   | 92.9    | 9.3  |
|                               | Corn          | Disked            |      |      |      |      |      | 6.5  | 22.2 | 13.2 | 4.8  | 9.5  | 8.5  | 10.8 | 6.3  | 1.7   | 83.5    | 8.4  |
| Average                       |               |                   |      | 27.7 | 21.8 | 0    | 17.5 | 31.9 | 31.0 | 23.7 | 22.8 | 5.7  | 21.1 | 18.4 | 14.9 | 215.1 | 18.8    |      |
| 571                           | Winter wheat  | Disked            |      |      |      |      |      |      |      |      | 12.6 | 8.1  | 15.5 | 1.1  | 5.8  | 2.3   | 45.4    | 7.6  |
| SPRING WHEAT                  |               |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |      |
| A                             | Wheat         | Spring plowed     | 8.8  | 17.2 | 2.0  | 0    | .3   | 16.0 | 6.2  | 5.8  | 4.9  | 13.5 | 1.1  | 4.2  | 0    | 71.2  | 5.9     |      |
| B                             | do            | Fall plowed       | 9.6  | 26.8 | 5.3  | 0    | 1.0  | 13.7 | 8.3  | 12.5 | 8.0  | 16.0 | 2.2  | 1.8  | 0    | 95.6  | 8.0     |      |
| Average                       |               |                   |      | 22.0 | 3.7  | 0    | .7   | 14.9 | 7.3  | 9.2  | 6.5  | 14.8 | 1.7  | 3.0  | 0    | 83.4  | 7.0     |      |
| C or D                        | Fallow        | Fallowed          | 10.5 | 22.8 | 5.3  | 0    | 6.2  | 18.0 | 16.3 | 10.2 | 16.1 | 15.0 | 7.1  | 12.8 | 4.7  | 134.5 | 11.2    |      |
| 1                             | Corn          | Disked            | 12.5 | 26.8 | 5.2  | 0    | .5   | 12.3 | 5.7  | 8.0  | 6.6  | 13.7 | 1.7  | 2.3  | 0    | 82.8  | 6.9     |      |
| 2                             | do            | Spring plowed     | 10.7 | 27.0 | 1.3  | 0    | .8   | 15.7 | 8.0  | 12.5 | 7.5  | 9.3  | 1.5  | 6.3  | 0    | 89.9  | 7.5     |      |
| 3                             | do            | Fall plowed       | 10.3 | 26.8 | .2   | 0    | .7   | 12.2 | 3.1  | 10.5 | 3.8  | 7.3  | 1.7  | 1.8  | 0    | 68.1  | 5.7     |      |
| 4                             | Oats          | do                | 13.1 | 24.5 | 3.5  | 0    | 3.0  | 14.2 | 6.2  | 10.5 | 9.4  | 13.8 | 1.1  | 2.5  | 0    | 88.7  | 7.4     |      |
| 5                             | Fallow        | Fallowed          | 8.1  | 25.5 | 4.3  | 0    | 4.2  | 14.2 | 16.5 | 9.5  | 6.9  | 13.3 | 4.8  | 10.3 | 3.3  | 112.8 | 9.4     |      |
| 8                             | Oats          | Fall plowed       | 11.8 | 27.0 | 2.5  | 0    | 1.2  | 16.7 | 3.8  | 13.3 | 8.6  | 11.5 | 4.8  | 1.7  | 0    | 91.1  | 7.6     |      |
| 9                             | do            | Spring plowed     | 11.7 | 25.8 | .2   | 0    | 1.0  | 14.2 | 2.2  | 9.7  | 6.9  | 9.0  | 5.9  | 3.5  | 0    | 78.4  | 6.5     |      |
| Average                       |               |                   |      | 26.2 | 2.5  | 0    | 1.6  | 14.2 | 6.5  | 10.6 | 7.1  | 11.1 | 3.1  | 4.1  | .5   | 87.4  | 7.3     |      |
| OATS                          |               |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |      |
| A                             | Oats          | Spring plowed     | 9.5  | 37.5 | 4.7  | 0    | 0    | 34.1 | 21.9 | 18.1 | 12.7 | 42.5 | 12.7 | 11.3 | 0    | 195.5 | 16.3    |      |
| B                             | do            | Fall plowed       | 9.7  | 53.4 | 6.6  | 0    | 0    | 27.5 | 26.9 | 17.2 | 19.8 | 45.0 | 17.2 | 8.1  | 0    | 221.7 | 18.5    |      |
| Average                       |               |                   |      | 45.5 | 5.7  | 0    | 0    | 30.8 | 24.4 | 17.7 | 16.3 | 43.8 | 15.0 | 9.7  | 0    | 208.6 | 17.4    |      |
| C or D                        | Fallow        | Fallowed          | 12.0 | 66.6 | 11.3 | 0    | 0    | 31.9 | 47.5 | 34.2 | 34.8 | 63.4 | 25.2 | 31.3 | 4.1  | 350.3 | 29.2    |      |
| 1                             | Wheat         | Fall plowed       | 9.2  | 49.1 | 4.4  | 0    | 0    | 25.9 | 31.6 | 24.8 | 20.2 | 45.0 | 17.0 | 5.6  | 0    | 223.6 | 18.6    |      |
| 2                             | do            | Spring plowed     | 11.3 | 33.1 | 9.1  | 0    | 0    | 27.2 | 37.8 | 21.3 | 17.3 | 57.5 | 16.1 | 14.7 | 0    | 234.1 | 19.5    |      |
| 3                             | do            | Fall plowed       | 10.6 | 43.4 | 5.0  | 0    | 0    | 21.6 | 36.3 | 18.1 | 16.7 | 42.8 | 11.7 | 5.0  | 0    | 200.6 | 16.7    |      |
| 4                             | Corn          | Disked            | 12.6 | 48.8 | 8.1  | 0    | 0    | 23.8 | 35.9 | 21.6 | 25.8 | 31.6 | 13.6 | 5.6  | 0    | 214.8 | 17.9    |      |
| 5                             | Wheat         | Fall plowed       | 8.4  | 57.2 | 5.9  | 0    | 0    | 27.8 | 28.8 | 32.2 | 18.9 | 41.9 | 25.5 | 5.9  | 0    | 244.1 | 20.3    |      |
| 6                             | Barley        | do                | 7.7  | 41.3 | 5.0  | 0    | 0    | 14.1 | 28.1 | 23.6 | 5.5  | 42.5 | 12.7 | 2.5  | 0    | 175.3 | 14.6    |      |
| 7                             | Corn          | Spring plowed     | 7.6  | 48.1 | 3.1  | 0    | 0    | 13.8 | 22.2 | 20.3 | 5.6  | 27.5 | 13.8 | 5.6  | 0    |       |         |      |



## CROP YIELDS AT THE COLBY (KANS.) FIELD STATION—Continued

TABLE 65.—Annual acre yields of specified crops grown in rotations on individual plots at Colby, Kans., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN TOTAL                    |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Corn          | Spring plowed  | 2,000 | 6,290 | 1,460 | 1,340 | 460   | 3,390 | 4,950 | 1,900 | 2,400 | 5,500 | 1,200 | 300   | 400   | 29,530 | 2,461   |
| B.....                        | do            | Fall plowed    | 1,640 | 6,700 | 940   | 970   | 390   | 4,360 | 7,690 | 1,800 | 2,500 | 6,200 | 900   | 500   | 300   | 33,250 | 2,771   |
| E.....                        | do            | Subsoiled      | 1,800 | 7,500 | 1,500 | 1,130 | 480   | 3,770 | 6,520 | 2,500 | 2,350 | 6,100 | 1,200 | 400   | 400   | 33,850 | 2,821   |
| F.....                        | do            | Spring listed  | 2,840 | 5,310 | 1,960 | 1,480 | 1,150 | 3,970 | 5,330 | 2,700 | 3,450 | 6,400 | 2,100 | 1,000 | 700   | 35,550 | 2,961   |
| G.....                        | do            | do             | 3,300 | 5,670 | 1,740 | 1,580 | 1,190 | 4,220 | 6,040 | 2,900 | 3,700 | 7,200 | 2,000 | 1,200 | 400   | 37,840 | 3,153   |
| Average.....                  |               |                | ----- | 6,294 | 1,508 | 1,300 | 730   | 3,942 | 6,106 | 2,360 | 2,880 | 6,280 | 1,480 | 680   | 440   | 34,000 | 2,833   |
| C or D.....                   | Fallow        | Fallowed       | 1,200 | 7,160 | 3,060 | 2,220 | 1,740 | 6,340 | 7,150 | 3,900 | 4,950 | 8,100 | 3,700 | 2,800 | 900   | 52,020 | 4,335   |
| 1.....                        | Oats          | Fall plowed    | 2,420 | 4,320 | 1,720 | 650   | 250   | 3,140 | 7,790 | 2,900 | 4,800 | 5,900 | 1,900 | 1,100 | 500   | 34,970 | 2,914   |
| 2.....                        | do            | Spring plowed  | 1,680 | 6,980 | 1,380 | 1,160 | 890   | 4,360 | 7,790 | 4,100 | 4,400 | 8,100 | 3,300 | 2,400 | 1,000 | 45,860 | 3,822   |
| 3.....                        | do            | Fall plowed    | 1,800 | 5,800 | 1,640 | 490   | 200   | 3,200 | 7,420 | 3,100 | 3,250 | 5,900 | 2,100 | 700   | 200   | 34,010 | 2,834   |
| 4.....                        | Wheat         | do             | 2,360 | 5,420 | 1,460 | 890   | 840   | 3,330 | 7,420 | 4,100 | 3,900 | 5,300 | 2,200 | 900   | 500   | 36,260 | 3,022   |
| 6.....                        | Oats          | do             | 2,220 | 5,630 | 1,600 | 360   | 200   | 2,360 | 6,480 | 3,100 | 3,000 | 5,800 | 2,300 | 700   | 400   | 31,930 | 2,661   |
| 7.....                        | Barley        | Spring plowed  | 1,940 | 6,220 | 1,360 | 480   | 270   | 2,960 | 6,980 | 3,300 | 3,640 | 7,700 | 2,900 | 900   | 400   | 37,110 | 3,093   |
| 9.....                        | Wheat         | do             | 1,260 | 5,220 | 1,540 | 700   | 440   | 3,020 | (9)   | 3,400 | 3,100 | 7,400 | 3,400 | 1,100 | 500   | 29,820 | 2,712   |
| 152.....                      | Milo          | Spring listed  | 1,630 | 1,480 | 1,250 | 880   | 100   | 1,750 | 4,750 | 1,900 | 1,900 | 4,600 | 800   | 400   | 200   | 20,000 | 1,667   |
| 153.....                      | Winter wheat  | do             | 1,940 | 2,780 | 900   | 620   | 180   | 2,090 | (9)   | 2,200 | 2,400 | 4,500 | 1,700 | 600   | 400   | 18,370 | 1,670   |
| 406.....                      | do            | do             |       |       |       |       |       | 2,990 | 7,090 | 2,400 | 2,200 | 6,000 | 1,500 | 500   | 300   | 19,990 | 2,856   |
| 574.....                      | do            | do             |       |       |       | 940   | 1,560 | 500   | 3,320 | 7,670 | 3,800 | 7,100 | 1,300 | 1,460 | 400   | 31,010 | 3,101   |
| 575.....                      | Milo          | do             |       |       | 960   | 2,060 | 220   | 2,970 | 7,380 | 3,100 | 2,300 | 7,600 | 1,700 | 1,400 | 300   | 29,030 | 2,903   |
| Average.....                  |               |                | ----- | 4,872 | 1,429 | 894   | 372   | 2,955 | 7,078 | 3,125 | 3,224 | 6,325 | 2,092 | 1,013 | 425   | 30,698 | 2,771   |
| CORN GRAIN                    |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Corn          | Spring plowed  | 0     | 55.4  | 0     | 0     | 0     | 26.3  | 38.7  | 16.3  | 19.2  | 38.0  | 2.4   | 0     | 0     | 196.3  | 16.4    |
| B.....                        | do            | Fall plowed    | 0     | 59.1  | 0     | 0     | 0     | 27.2  | 51.9  | 16.9  | 14.4  | 44.6  | 1.2   | 0     | 0     | 215.3  | 17.9    |
| E.....                        | do            | Subsoiled      | 0     | 65.0  | 0     | 0     | 0     | 26.0  | 56.5  | 19.9  | 15.0  | 43.9  | 2.2   | 0     | 0     | 228.5  | 19.0    |
| F.....                        | do            | Spring listed  | 0     | 44.1  | 2.6   | 3.9   | 3.2   | 31.5  | 45.7  | 23.7  | 28.5  | 47.5  | 15.6  | 3.1   | 0     | 249.4  | 20.8    |
| G.....                        | do            | do             | 2.3   | 42.1  | 2.0   | 3.0   | 6.0   | 29.4  | 53.9  | 25.6  | 30.0  | 53.9  | 12.4  | 2.3   | 0     | 260.6  | 21.7    |
| Average.....                  |               |                | ----- | 53.1  | .9    | 1.4   | 1.8   | 28.1  | 49.3  | 20.5  | 21.4  | 45.6  | 6.8   | 1.1   | 0     | 230.0  | 19.2    |
| C or D.....                   | Fallow        | Fallowed       | 0     | 64.4  | 3.6   | 4.9   | 6.9   | 43.6  | 52.7  | 36.7  | 37.9  | 56.4  | 21.6  | 14.0  | 0     | 342.7  | 28.6    |
| 1.....                        | Oats          | Fall plowed    | 0     | 36.7  | 0     | 0     | 0     | 25.6  | 59.9  | 18.7  | 25.0  | 40.1  | 3.6   | 0     | 0     | 209.6  | 17.5    |
| 2.....                        | do            | Spring plowed  | 0     | 52.9  | 0     | 0     | 0     | 32.8  | 65.2  | 30.7  | 27.8  | 55.8  | 17.9  | 10.3  | 0     | 293.4  | 24.5    |
| 3.....                        | do            | Fall plowed    | 0     | 47.6  | 0     | 0     | 0     | 18.1  | 57.7  | 25.7  | 11.4  | 39.3  | 4.2   | 0     | 0     | 204.0  | 17.0    |
| 4.....                        | Wheat         | do             | 0     | 46.1  | 0     | 0     | 0     | 22.6  | 61.6  | 25.7  | 21.6  | 37.1  | 3.6   | 0     | 0     | 218.3  | 18.2    |
| 6.....                        | Oats          | do             | 0     | 48.3  | 0     | 0     | 0     | 14.7  | 41.1  | 19.9  | 9.5   | 38.2  | 3.7   | 0     | 0     | 175.4  | 14.6    |
| 7.....                        | Barley        | Spring plowed  | 0     | 42.7  | 0     | 0     | 0     | 17.5  | 47.7  | 18.1  | 14.9  | 50.2  | 10.6  | 0     | 0     | 201.7  | 16.8    |
| 9.....                        | Wheat         | do             | 0     | 40.7  | 0     | 0     | 0     | 19.9  | 59.3  | 23.9  | 18.0  | 51.0  | 14.7  | 0     | 0     | 227.5  | 19.0    |
| 152.....                      | Milo          | Spring listed  | 2.8   | 13.4  | 1.1   | 2.7   | 0     | 13.2  | 35.3  | 13.7  | 13.2  | 30.7  | 5.1   | 0     | 0     | 128.4  | 10.7    |
| 153.....                      | Winter wheat  | do             | 4.8   | 23.0  | .9    | 2.1   | 0     | 16.5  | 29.5  | 16.1  | 16.4  | 33.1  | 10.5  | 1.9   | 0     | 150.0  | 12.5    |
| 406.....                      | do            | do             |       |       |       |       |       | 24.8  | 42.5  | 20.0  | 21.0  | 39.3  | 8.3   | 0     | 0     | 131.1  | 18.7    |
| 574.....                      | do            | do             |       |       |       | 2.4   | 0     | 25.3  | 50.3  | 30.7  | 31.7  | 48.1  | 8.5   | 5.7   | 0     | 202.7  | 20.3    |
| 575.....                      | Milo          | do             |       |       |       | 3.6   | 0     | 23.2  | 53.1  | 21.4  | 13.5  | 50.5  | 4.5   | 4.8   | 0     | 174.6  | 17.5    |
| Average.....                  |               |                | ----- | 39.0  | .2    | 1.0   | 0     | 20.9  | 50.3  | 22.1  | 18.7  | 42.8  | 7.9   | 1.9   | 0     | 193.1  | 17.3    |
| BARLEY <sup>3</sup>           |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Barley        | Spring plowed  | 14.0  | 42.3  | 2.3   | 0     | 4.4   | 37.5  | 29.2  | 18.1  | 19.1  | 43.3  | 14.8  | 13.5  | 0     | 224.5  | 18.7    |
| B.....                        | do            | Fall plowed    | 10.0  | 41.7  | 14.8  | 0     | 7.1   | 42.7  | 27.5  | 25.2  | 32.5  | 36.0  | 20.0  | 8.3   | 0     | 255.8  | 21.3    |
| Average.....                  |               |                | ----- | 42.0  | 8.6   | 0     | 5.8   | 40.1  | 28.4  | 21.7  | 25.8  | 39.7  | 17.4  | 10.9  | 0     | 240.2  | 20.0    |
| C or D.....                   | Fallow        | Fallowed       | 11.4  | 61.9  | 20.8  | 0     | 11.7  | 52.5  | 55.0  | 35.3  | 36.3  | 54.4  | 40.4  | 35.8  | 8.1   | 412.2  | 34.4    |
| 6.....                        | Corn          | Disked         | 7.6   | 52.9  | 7.9   | 0     | 2.1   | 44.4  | 16.7  | 15.2  | 6.4   | 37.3  | 15.0  | 3.5   | 0     | 201.4  | 16.8    |
| 7.....                        | Oats          | Spring plowed  | 10.1  | 43.8  | 0     | 0     | 3.5   | 44.4  | 22.5  | 21.0  | 12.5  | 46.0  | 22.1  | 13.3  | 0     | 229.1  | 19.1    |
| 406.....                      | Corn          | Disked         |       |       |       |       |       | 47.3  | 26.0  | 1.0   | 13.2  | 17.9  | 8.2   | 9.8   | 0     | 76.1   | 10.9    |
| 407.....                      | Milo          | do             |       |       |       |       |       | 52.3  | 22.7  | 4.2   | 14.4  | 14.6  | 5.9   | 18.5  | 0     | 80.3   | 11.5    |
| Average.....                  |               |                | ----- | 48.4  | 4.0   | 0     | 2.8   | 44.4  | 22.0  | 10.4  | 11.6  | 29.0  | 12.8  | 11.3  | 0     | 146.7  | 14.6    |
| MILO GRAIN <sup>7</sup>       |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Milo          | Spring plowed  | 0     | 11.4  | 0     | 3.4   | 7.1   | 27.6  | 18.3  | 15.7  | 17.0  | 30.9  | 4.7   | 6.0   | 0     | 142.1  | 11.8    |
| B.....                        | do            | Fall plowed    | 0     | 12.6  | 0     | 3.1   | 9.1   | 28.8  | 20.7  | 15.9  | 12.3  | 44.8  | 6.7   | 1.6   | 0     | 155.6  | 13.0    |
| E.....                        | do            | Subsoiled      | 0     | 5.9   | 0     | 5.4   | 9.1   | 14.7  | 21.4  | 26.0  | 12.8  | 48.3  | 9.1   | 5.2   | 0     | 157.9  | 13.2    |
| F.....                        | do            | Spring listed  | 0     | 0     | 0     | 0     | 8.3   | 32.8  | 18.8  | 10.2  | 16.1  | 27.2  | 1.7   | 15.9  | 0     | 131.0  | 10.9    |
| G.....                        | do            | do             | 0     | 0     | 0     | 0     | 7.9   | 31.7  | 23.8  | 11.2  | 23.9  | 29.0  | 6.1   | 10.7  | 0     | 144.3  | 12.0    |
| Average.....                  |               |                | ----- | 6.0   | 0     | 2.4   | 8.3   | 27.1  | 20.6  | 15.8  | 16.4  | 36.0  | 5.7   | 7.9   | 0     | 146.2  | 12.2    |
| C or D.....                   | Fallow        | Fallowed       | 0     | 12.4  | 0     | 6.9   | 21.2  | 31.6  | 47.6  | 34.0  | 42.2  | 66.6  | 33.6  | 15.2  | 0     | 311.3  | 25.9    |
| 151.....                      | Winter rye    | Green manured  | 0     | 2.8   | 0     | 5.5   | 16.6  | 32.1  | 55.0  | 38.8  | 33.5  | 57.1  | 30.6  | 9.7   | 0     | 281.7  | 23.5    |
| 152.....                      | do            | do             | 0     | 5.7   | 0     | 3.1   | 18.6  | 33.4  | 54.1  | 34.9  | 29.1  | 47.8  | 25.0  | 5.2   | 0     | 256.9  | 21.4    |
| 153.....                      | Corn          | Spring listed  | 0     | 0     | 0     | 0     | 6.9   | 31.2  | 25.3  | 26.3  | 13.2  | 27.2  | 5.1   | 15.7  | 0     | 150.9  | 12.6    |
| 154.....                      | Peas          | Green manured  | 0     | 4.8   | 0     | 9.3   | 17.2  | 29.5  | 53.1  | 36.5  | 37.4  | 50.3  | 28.8  | 18.1  | 0     | 235.0  | 23.8    |
| 155.....                      | Fallow        | Fallowed       | 0     | 4.7   | 0     | 10.5  | 10.9  | 23.8  | 55.5  | 56.9  | 28.2  | 68.2  | 42.6  | 32.8  | 0     | 334.1  | 27.8    |
| 156.....                      | do            | do             | 0     | 4.0   | 0     | 9.1   | 5.9   | 23.3  | 58.1  | 55.4  | 43.6  | 66.5  | 42.2  | 26.2  | 0     | 334.3  | 27.9    |
| 257.....                      | Winter wheat  | Spring listed  |       |       | 0     | 0     | 1.7   | 25.7  | 7.8   | 17.7  | 22.3  | 29.1  | 0     | 5.9   | 0     | 110.2  | 11.0    |
| 407.....                      | do            | do             |       |       |       |       |       | 21.7  | 14.3  | 15.4  | 15.5  | 28.7  | 0     | 5.3   | 0     | 79.2   | 11.3    |
| 501.....                      | do            | Listed         | 0     | 0     | 0     | 3.3   | 8.6   | 37.2  | 21.7  | 20.7  | 19.4  | 46.6  | 11.6  | 11.7  | 0     | 180.8  | 15.1    |
| 502.....                      |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |



## CROP YIELDS AT THE COLBY (KANS.) FIELD STATION—Continued

TABLE 65.—Annual acre yields of specified crops grown in rotations on individual plots of Colby, Kans., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop   | Tillage method     | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|-----------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>MILO GRAIN—con.</b>        |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 552.....                      | Winter wheat... | Spring listed..... | 0     | 0     | 0     | 0     | 0.5   | 31.9  | 23.1  | 15.5  | 16.8  | 32.8  | 0     | 6.4   | 0     | 127.0  | 10.6    |
| 553.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | .4    | 34.1  | 22.8  | 27.9  | 23.4  | 40.3  | .4    | 6.4   | 0     | 155.7  | 13.0    |
| 554.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.9   | 38.8  | 24.0  | 12.3  | 24.6  | 35.4  | 0     | 13.3  | 0     | 150.3  | 12.5    |
| 555.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.0   | 36.9  | 21.9  | 11.7  | 24.2  | 33.5  | 0     | 7.8   | 0     | 137.0  | 11.4    |
| 556.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.0   | 33.1  | 21.2  | 11.1  | 21.3  | 35.9  | 0     | 7.1   | 0     | 130.7  | 10.9    |
| 557.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.2   | 31.2  | 24.5  | 14.0  | 18.0  | 40.4  | 0     | 5.7   | 0     | 135.0  | 11.3    |
| 558.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.6   | 40.0  | 20.5  | 15.4  | 18.4  | 43.4  | 14.5  | 6.0   | 0     | 159.8  | 13.3    |
| 559.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.0   | 31.7  | 21.0  | 25.6  | 19.9  | 46.8  | 3.7   | 4.1   | 0     | 153.8  | 12.8    |
| 560.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.9   | 33.8  | 22.2  | 22.9  | 19.5  | 55.6  | 5.2   | 2.8   | 0     | 163.9  | 13.7    |
| 575.....                      | do.....         | do.....            | 0     | 0     | 0     | 0     | 1.2   | 13.3  | 15.3  | 21.6  | 15.4  | 46.6  | 0     | 6.9   | 0     | 120.3  | 12.0    |
| Average.....                  |                 |                    |       | .8    | 0     | 2.4   | 5.4   | 32.5  | 26.6  | 24.6  | 20.3  | 44.0  | 9.1   | 8.6   | 0     | 173.0  | 14.7    |
| <b>KAFIR TOTAL</b>            |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Kafir.....      | Spring plowed..... | 2,180 | 5,610 | 1,360 | 4,200 | 2,200 | 4,930 | 9,600 | 4,100 | 4,050 | 7,200 | 1,700 | 1,100 | 450   | 46,500 | 3,875   |
| B.....                        | do.....         | Fall plowed.....   | 2,180 | 5,790 | 820   | 4,660 | 2,050 | 4,350 | 8,900 | 4,300 | 3,600 | 8,600 | 2,600 | 1,900 | 280   | 47,850 | 3,988   |
| Average.....                  |                 |                    |       | 5,700 | 1,090 | 4,430 | 2,125 | 4,640 | 9,250 | 4,200 | 3,825 | 7,900 | 2,150 | 1,500 | 365   | 47,175 | 3,932   |
| C or D.....                   | Fallow.....     | Fallowed.....      | 2,180 | 4,840 | 2,110 | 9,740 | 2,870 | 6,080 | 8,700 | 9,400 | 6,350 | 9,900 | 7,100 | 8,100 | 1,800 | 76,990 | 6,416   |
| <b>KAFIR GRAIN*</b>           |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Kafir.....      | Spring plowed..... | 0     | 0     | 0     | 0     | 9.5   | 23.2  | 32.7  | 22.8  | 7.1   | 27.5  | .9    | 1.3   | 0     | 128.0  | 10.7    |
| B.....                        | do.....         | Fall plowed.....   | 0     | 0     | 0     | 0     | 6.7   | 22.0  | 28.7  | 24.8  | 1.2   | 35.1  | 3.4   | 1.0   | 0     | 122.9  | 10.2    |
| Average.....                  |                 |                    |       | 0     | 0     | 0     | 8.1   | 24.1  | 30.7  | 23.8  | 4.2   | 31.3  | 2.2   | 1.2   | 0     | 125.5  | 10.5    |
| C or D.....                   | Fallow.....     | Fallowed.....      | 0     | 0     | 0     | 0     | 12.0  | 23.0  | 25.7  | 33.1  | 22.3  | 35.8  | 27.0  | 28.2  | 1.7   | 213.8  | 17.8    |
| <b>FETERITA</b>               |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1.....                        | Feterita.....   | Spring listed..... |       |       |       | 4.0   | 3.1   | 0     | 0     | 2.8   | 12.8  | 9.5   | 0     | 12.8  | 0     | 41.0   | 4.6     |
| 2.....                        | do.....         | do.....            |       |       |       | 2.9   | 2.1   | 0     | 0     | 5.0   | 22.6  | 18.8  | 0     | 17.8  | 0     | 66.3   | 7.4     |
| 3.....                        | do.....         | do.....            |       |       |       | 2.4   | 2.2   | 0     | 0     | 6.1   | 22.2  | 14.8  | 0     | 23.3  | 0     | 68.6   | 7.6     |
| 4.....                        | do.....         | do.....            |       |       |       | 1.6   | 4.7   | 0     | 0     | 5.8   | 9.5   | 13.1  | 0     | 32.1  | 0     | 65.2   | 7.2     |
| 5.....                        | do.....         | do.....            |       |       |       | .9    | 1.6   | 0     |       |       |       |       |       |       |       | 1.6    | .8      |
| Average.....                  |                 |                    |       |       |       |       | 2.7   | 0     | 0     | 4.9   | 16.8  | 14.1  | 0     | 21.5  | 0     | 48.5   | 5.5     |
| <b>PINTO BEANS</b>            |                 |                    |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 259.....                      | Winter wheat... | Spring plowed..... |       |       |       |       |       | 2.5   | 6.3   | 7.8   | 3.4   | 19.3  | 3.8   | 1.8   | 0     | 42.4   | 6.1     |

\* Kafir grain did not mature in 1914, 1915, 1916, and 1917.

## CROP YIELDS AT THE HAYS (KANS.) FIELD STATION

TABLE 66.—Annual acre yields of specified crops grown in rotations on individual plots at Hays, Kans., in one or more years from 1906 to 1926

[For descriptions of rotations, see pages 32-43. Repeated rotations are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1907 to 1924, see Figure 32 (p. 48), Miscellaneous Circular No. 81. Yields of total weights of corn, broomgrass, alfalfa, sorgo, and kafir are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop      | Tillage method         | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |  |
|-------------------------------|--------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|--|
| WINTER WHEAT                  |                    |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |  |
| A.....                        | Winter wheat.....  | Late fall plowed.....  | 0    | 11.7 | 25.6 | 0    | 20.5 | 0    | 2.3  | 0.8  | 20.6 | 9.3  | 8.7  | 0    | 9.7  | 17.9 | 19.9 | 4.2  | 0.5  | 0    | 31.1 | 0    | 3.5  | 186.3 | 9.3     |  |
| B.....                        | do.....            | Early fall plowed..... | 0    | 18.2 | 23.3 | 0    | 27.8 | 0    | 13.8 | 2.3  | 24.8 | 13.1 | 22.7 | 2.0  | 14.9 | 16.8 | 24.4 | 26.9 | 6.8  | 0    | 38.1 | 1.2  | 14.8 | 292.2 | 14.6    |  |
| Average.....                  |                    |                        | 15.0 | 24.5 | 0    | 24.2 | 0    | 2.2  | 8.1  | 1.6  | 22.7 | 11.2 | 15.7 | 1.0  | 12.3 | 17.4 | 22.2 | 15.6 | 3.7  | 0    | 34.6 | 0.6  | 9.2  | 239.3 | 12.0    |  |
| C or D.....                   |                    |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |  |
| 51.....                       | Fallow.....        | Fallowed.....          | 0    | 11.2 | 32.3 | 0    | 42.5 | 2.6  | 29.2 | 10.3 | 21.6 | 11.3 | 33.8 | 7.1  | 35.8 | 10.0 | 37.0 | 37.1 | 25.2 | 0    | 45.6 | 23.3 | 26.2 | 442.1 | 22.1    |  |
| 52.....                       | Winter rye.....    | Green manured.....     | 0    | 9.3  | 21.8 | 0    | 22.5 | 1.2  | 0    | 8.7  | 19.8 | 19.8 | 28.8 | 5.3  | 4.7  | 14.6 | 30.9 | 28.3 | 23.7 | 0    | 45.0 | 5.5  | 5.7  | 295.6 | 14.8    |  |
| 53.....                       | Corn.....          | Disked.....            | 0    | 7.0  | 11.7 | 0    | 35.0 | 1.5  | 8.6  | 2.5  | 21.4 | 18.8 | 31.5 | 3.3  | 10.7 | 20.6 | 27.8 | 7.1  | 22.8 | 0    | 40.7 | 4.5  | 11.8 | 276.2 | 13.8    |  |
| 54.....                       | do.....            | do.....                | 0    | 9.9  | 11.9 | 0    | 29.5 | 0.6  | 13.9 | 8.1  | 24.0 | 20.7 | 36.6 | 3.3  | 9.3  | 24.7 | 37.7 | 7.1  | 22.8 | 0    | 50.5 | 3.2  | 13.3 | 324.1 | 16.2    |  |
| 55.....                       | Winter rye.....    | Green manured.....     | 0    | 12.3 | 23.2 | 0    | 30.9 | 2.3  | 13.2 | 8.1  | 23.5 | 21.8 | 33.9 | 1.7  | 13.7 | 12.7 | 32.6 | 36.3 | 22.1 | 0    | 49.8 | 7.3  | 11.2 | 357.9 | 17.9    |  |
| 56.....                       | Peas.....          | do.....                | 0    | 14.5 | 9.4  | 0    | 39.3 | 2.3  | 10.1 | 4.6  | 22.5 | 20.4 | 33.2 | 3.3  | 13.6 | 13.5 | 33.3 | 36.7 | 25.4 | 0    | 44.1 | 13.0 | 18.8 | 355.8 | 17.8    |  |
| 57.....                       | Fallow.....        | Fallowed.....          | 0    | 12.3 | 29.2 | 0    | 42.7 | 5.2  | 27.7 | 16.4 | 19.9 | 17.5 | 34.8 | 1.5  | 13.7 | 13.5 | 33.3 | 36.7 | 26.8 | 0    | 33.7 | 22.8 | 18.3 | 403.7 | 20.2    |  |
| 58.....                       | Green manured..... | do.....                | 0    | 14.0 | 11.3 | 0    | 40.1 | 1.6  | 19.0 | 11.6 | 18.5 | 21.3 | 34.8 | 0    | 9.3  | 20.3 | 30.0 | 33.9 | 28.4 | 0    | 41.7 | 12.8 | 17.3 | 330.6 | 17.4    |  |
| 59.....                       | Disked.....        | do.....                | 0    | 7.8  | 11.3 | 0    | 23.3 | 0    | 10.0 | 6.5  | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 60.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 61.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 62.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 63.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 64.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 65.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 66.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 67.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 68.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 69.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 70.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 71.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 72.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 73.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 74.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 75.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 76.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 77.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 78.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 79.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 80.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 81.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 82.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 83.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 84.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 85.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 86.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 87.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 88.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 89.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 90.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 91.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 92.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 93.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 94.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 95.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |
| 96.....                       | do.....            | do.....                | 0    | 8.8  | 9.4  | 0    | 25.1 | 0    | 12.9 | 0    | 6.7  | 19.7 | 21.7 | 3.1  | 13.3 | 18.1 | 23.6 | 5.6  | 21.1 | 0    | 38.3 | 2.2  | 9.7  | 240.6 | 14.5    |  |









|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
|------------|-----------------------|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------|----------------|----------------|-----------------|------------------|----------------|
| 141<br>142 | Bromegrass<br>Alfalfa | Fallow plowed<br>do.           | 33.4<br>30.6   | 5.1<br>4.5     | 25.8<br>25.9   | 36.7<br>40.5   | 24.9<br>13.0   | 22.8<br>14.8   | 33.1<br>32.3   | 11.6<br>10.8   | 35.2<br>25.9   | 31.5<br>29.4   | 0<br>0     | 51.4<br>52.7   | .6<br>.6       | 30.6<br>31.6    | 409.2<br>372.6   | 20.5<br>18.6   |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Oats<br>do.           | Subsoiled<br>Fallow listed     | 21.5<br>15.3   | 0<br>0         | 45.1<br>47.6   | 26.6<br>29.7   | 1.0<br>3.5     | 49.7<br>57.8   | 41.1<br>51.3   | 43.9<br>50.3   | 45.0<br>50.3   | 46.9<br>40.2   | 0<br>0     | 40.5<br>40.5   | 2.5<br>3.8     | 41.9<br>47.4    | 478.4<br>474.5   | 23.9<br>23.7   |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Corn<br>do.           | Spring plowed<br>Fallow plowed | 7.940<br>7.740 | 5.580<br>4.500 | 1.680<br>1.140 | 3.680<br>3.430 | 1.870<br>1.675 | 2.400<br>2.003 | 2.150<br>2.575 | 6.235<br>6.215 | 4.350<br>3.400 | 4.250<br>3.300 | 550<br>620 | 2,600<br>2,400 | 4.100<br>4.000 | 1,600<br>550    | 58,475<br>52,570 | 2,924<br>2,629 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Fallow                | Fallow                         | 7.840<br>7.590 | 5.040<br>8.000 | 1.410<br>2.290 | 3.555<br>3.490 | 1.773<br>1.805 | 2.200<br>3.630 | 2.363<br>3.100 | 6.250<br>6.765 | 3.875<br>5.550 | 3.775<br>4.750 | 585<br>620 | 2,500<br>3,650 | 4.050<br>2,950 | 1,075<br>77,280 | 55,523<br>57,280 | 2,777<br>3,864 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| O or D     | Oats<br>do.           | Fallow plowed<br>Spring plowed | 7.030<br>7.160 | 6.900<br>5.500 | 3.940<br>3.270 | 3.240<br>2.970 | 1.820<br>2.285 | 2.450<br>2.825 | 3.050<br>3.850 | 6.240<br>5.125 | 4.900<br>3.900 | 3.950<br>4.200 | 780<br>800 | 2,050<br>2,100 | 4.100<br>3.950 | 1,000<br>2,300  | 58,650<br>56,545 | 2,933<br>2,827 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 1<br>2     | Wheat<br>do.          | Fallow plowed<br>do.           | 4.220<br>4.220 | 5.960<br>5.540 | 1.640<br>1.640 | 3.800<br>3.100 | 1.880<br>2.210 | 2.400<br>2.600 | 2.850<br>3.150 | 6.285<br>6.420 | 4.800<br>4.700 | 4.200<br>3.900 | 725<br>615 | 2,900<br>2,600 | 4.550<br>3.550 | 1,250<br>850    | 57,015<br>58,955 | 2,852<br>2,948 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 3<br>4     | Barley<br>do.         | Spring plowed<br>do.           | 3.140<br>3.420 | 5.000<br>4.820 | 1.640<br>2.600 | 3.010<br>3.180 | 1.905<br>1.850 | 2.600<br>2.100 | 3.000<br>2.100 | 6.580<br>6.505 | 4.700<br>4.050 | 3.900<br>3.450 | 750<br>665 | 1,150<br>2,900 | 3.850<br>3.800 | 2,550<br>3,200  | 58,765<br>57,235 | 2,948<br>2,862 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 5<br>6     | Winter wheat<br>do.   | Fallow<br>do.                  | 3.820<br>3.860 | 5.620<br>5.640 | 2.120<br>2.920 | 3.330<br>3.230 | 1.850<br>1.930 | 2.900<br>3.840 | 3.250<br>3.825 | 6.510<br>6.085 | 4.750<br>4.400 | 4.100<br>3.605 | 890<br>849 | 2,270<br>2,850 | 3.400<br>4.100 | 3,150<br>59,295 | 59,295<br>58,257 | 2,818<br>2,913 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 7<br>8     | Winter wheat<br>do.   | Fallow<br>do.                  | 3.460<br>3.020 | 5.000<br>5.280 | 2.920<br>3.080 | 3.312<br>3.260 | 1.610<br>1.630 | 3.840<br>3.840 | 3.312<br>3.312 | 6.040<br>6.040 | 4.900<br>4.900 | 4.400<br>4.000 | 845<br>590 | 2,850<br>3,350 | 4.600<br>3.350 | 2,750<br>59,445 | 59,445<br>54,445 | 2,972<br>2,724 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 9<br>10    | Oats<br>do.           | Fallow<br>do.                  | 3.220<br>3.420 | 5.200<br>5.200 | 2.580<br>2.580 | 3.260<br>3.220 | 2.305<br>2.280 | 3.550<br>3.550 | 3.250<br>3.250 | 5.530<br>5.530 | 4.170<br>4.170 | 4.000<br>3.800 | 590<br>550 | 3,300<br>3,300 | 4.800<br>4.800 | 1,500<br>1,800  | 28,990<br>28,990 | 2,635<br>2,977 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 11<br>12   | Winter wheat<br>do.   | Fallow plowed<br>do.           | 3.420<br>3.420 | 5.420<br>5.420 | 2.530<br>2.530 | 3.220<br>3.220 | 2.280<br>2.280 | 3.550<br>3.550 | 3.250<br>3.250 | 5.530<br>5.530 | 4.170<br>4.170 | 4.000<br>3.800 | 590<br>550 | 3,300<br>3,300 | 4.800<br>4.800 | 1,500<br>1,800  | 28,990<br>28,990 | 2,635<br>2,977 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Fallow                | Fallow                         | 6.253<br>5.220 | 5.731<br>5.680 | 2.557<br>1.120 | 3.124<br>2.720 | 2.083<br>1.880 | 2.105<br>2.500 | 3.003<br>3.370 | 6.200<br>7.685 | 4.374<br>4.100 | 4.134<br>4.000 | 719<br>600 | 2,394<br>2,600 | 4.206<br>4.850 | 2,159<br>61,005 | 52,667<br>52,667 | 2,883<br>3,050 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Corn<br>do.           | Subsoiled<br>Spring listed     | 7.380<br>7.380 | 4.720<br>4.720 | 920<br>920     | 2,640<br>2,640 | 1.460<br>1.460 | 2.125<br>2.125 | 2.370<br>2.370 | 5.485<br>5.485 | 3,600<br>3,600 | 4,000<br>4,000 | 735<br>668 | 2,700<br>2,650 | 4.500<br>4.675 | 2,300<br>1,700  | 56,710<br>58,858 | 2,836<br>2,943 |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Corn<br>do.           | Spring plowed<br>Fallow plowed | 18.9<br>9.6    | 13.1<br>12.2   | .9<br>3.1      | 4.9<br>7.9     | 11.1<br>6.9    | 3.8<br>3.6     | 2.3<br>1.4     | 18.0<br>17.1   | 10.0<br>3.6    | 5.9<br>3.4     | 0<br>0     | 3.1<br>3.0     | 17.6<br>16.1   | 1.0<br>.1       | 119.2<br>102.8   | 6.0<br>3.1     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| Average    | Fallow                | Fallow                         | 12.71<br>9.2   | 2.0<br>4.4     | 6.4<br>15.3    | 9.0<br>8.4     | 16.1<br>16.3   | 3.7<br>7.3     | 1.9<br>12.4    | 17.6<br>20.4   | 6.8<br>22.4    | 4.7<br>16.9    | 0<br>0     | 3.1<br>7.4     | 16.9<br>6.0    | 220.8<br>220.8  | 11.6<br>11.6     | 5.6<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| C or D     | Oats<br>do.           | Fallow plowed<br>Spring plowed | 7.2<br>4.6     | 4.8<br>16.0    | 13.8<br>10.6   | 6.8<br>6.6     | 15.6<br>19.3   | 4.6<br>2.2     | .9<br>1.1      | 12.8<br>10.2   | 17.0<br>17.3   | 9.2<br>5.6     | 0<br>0     | 1.7<br>2.1     | 16.0<br>14.0   | .9<br>1.1       | 112.4<br>113.3   | 5.9<br>5.7     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 1<br>2     | Wheat<br>do.          | Fallow plowed<br>do.           | 7.4<br>5.1     | 3.6<br>5.4     | 10.6<br>14.0   | 6.6<br>5.9     | 19.0<br>16.6   | 2.2<br>3.9     | 1.1<br>4.4     | 13.0<br>13.6   | 19.9<br>16.3   | 10.4<br>8.4    | 0<br>0     | 3.0<br>3.9     | 12.0<br>15.3   | .3<br>1.3       | 102.8<br>140.5   | 3.1<br>4.5     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 3<br>4     | Barley<br>do.         | Spring plowed<br>do.           | 6.8<br>5.0     | 5.1<br>4.0     | 15.1<br>14.0   | 8.4<br>7.9     | 20.3<br>15.9   | 2.8<br>2.8     | .3<br>1.1      | 11.9<br>11.9   | 16.3<br>8.2    | 9.3<br>11.3    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.3<br>1.3      | 190.7<br>120.7   | 4.5<br>6.0     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 5<br>6     | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 7<br>8     | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 9<br>10    | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 11<br>12   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 13<br>14   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 15<br>16   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 17<br>18   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 19<br>20   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 21<br>22   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 23<br>24   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 25<br>26   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 27<br>28   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 29<br>30   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 31<br>32   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 33<br>34   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 35<br>36   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 37<br>38   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 39<br>40   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 41<br>42   | Winter wheat<br>do.   | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 43<br>44   | Oats<br>do.           | Fallow<br>do.                  | 6.2<br>3.8     | 4.3<br>1.8     | 18.4<br>17.1   | 3.9<br>3.9     | 16.6<br>16.3   | 1.1<br>1.1     | .4<br>1.1      | 14.6<br>14.6   | 2.8<br>1.9     | 11.3<br>9.2    | 0<br>0     | .8<br>.8       | 17.0<br>12.6   | 1.4<br>1.4      | 120.7<br>111.6   | 6.0<br>5.6     |
|            |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |
| 45<br>4    |                       |                                |                |                |                |                |                |                |                |                |                |                |            |                |                |                 |                  |                |







[illegible]



## CROP YIELDS AT THE GARDEN CITY (KANS.) FIELD STATION

TABLE 67.—Annual acre yields of specified crops grown in rotations on individual plots at Garden City, Kans., in one or more years from 1909 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. An asterisk (\*) prefixed in column 1 under sorgho, milo, kafir, fetartha, Sudan grass, and broomcorn indicates the serial number of seed-bed preparation instead of the rotation number. For climatic conditions 1909 to 1924, see Figure 34 (p. 52), Miscellaneous Circular No. 81. Yields of total weight of corn, sorgho, kafir, millet, cowpea hay, Sudan grass, and broomcorn are given in pounds; all other yields are stated in bushels. Land was broken in 1907 and seeded in 1908 in accordance with rotation plans, but no available record of yields was kept.]

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |  |
|-------------------------------|---------------|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|--|
| WINTER WHEAT                  |               |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |  |
| A                             | Winter wheat  | Late fall plowed  | 0    | 4.0  | 0    | 0    | 0    | 7.3  | 10.0 | 0    | 0    | 0    | 17.3 | 0    | 3.8  |      | 0    | 14.0 | 0    | 1.2  | 57.6  | 3.6     |  |
| B                             | do            | Early fall plowed | 0    | 4.7  | 0    | 0    | 0    | 6.3  | 10.0 | 0    | 0    | 0    | 21.0 | 0    | 8.8  |      | 0    | 17.0 | 0    | 1.7  | 76.1  | 4.8     |  |
| C                             | do            | Subsoiled         | 0    | 7.3  | 0    | 0    | 0    | 6.7  | 9.9  | 0    | 0    | 0    | 20.5 | 6.7  | 5.8  |      | 4.8  | 23.2 | 2.5  | 3.8  | 107.0 | 6.7     |  |
| D                             | do            | Fall listed       | 0    | 8.8  | 0    | 0    | 0    | 13.5 | 12.9 | 0    | 0    | 0    | 22.5 | 8.8  | 6.2  |      |      |      |      |      |       |         |  |
| Average                       |               |                   |      | 6.2  | 0    | 0    | 0    | 8.5  | 10.7 | 0    | 0    | 0    | 20.0 | 3.9  | 6.2  |      | 1.2  | 18.9 | .6   | 2.4  | 78.5  | 4.9     |  |
| C or D                        | Fallow        | Fallow            | 0    | 7.5  | 0    | 0    | 0    | 14.5 | 21.6 | 6.2  | 0    | 0    | 19.8 | 7.2  | 11.2 |      | 2.3  | 23.0 | 12.5 | 3.3  | 120.1 | 8.1     |  |
| H or I                        | do            | do                |      |      |      |      |      | 13.4 | 22.3 | 6.3  | 0    | .3   | 27.5 | 7.3  | 21.7 |      | 1.3  | 20.5 | 24.8 | 11.5 | 105.9 | 13.8    |  |
| J or K                        | do            | do                |      |      |      |      |      | 12.5 | 21.1 | 6.3  | 0    | .8   | 24.0 | 6.0  | 13.5 |      | 2.2  | 27.5 | 23.0 | 10.8 | 150.7 | 12.6    |  |
| L or M                        | do            | do                |      |      |      |      |      | 10.3 | 20.5 | 8.5  | 0    | 2.2  | 23.8 | 7.7  | 12.3 |      | 4.3  | 23.3 | 18.3 | 1.8  | 131.5 | 11.0    |  |
| N or O                        | do            | do                |      |      |      |      |      | 9.5  | 13.2 | 4.7  | 0    | 0    | 22.8 | 6.0  | 9.0  |      | 2.2  | 20.8 | 2.0  | 0    | 92.3  | 7.7     |  |
| P or Q                        | do            | do                |      |      |      |      |      | 9.5  | 19.2 | 3.3  | 0    | 0    | 26.0 | 6.0  | 20.0 |      | 2.2  | 26.3 | 21.7 | 13.0 | 140.7 | 12.8    |  |
| Average                       |               |                   |      | 7.5  | 0    | 0    | 0    | 12.0 | 20.2 | 5.9  | 0    | .6   | 24.0 | 6.7  | 14.6 |      | 2.5  | 25.1 | 17.6 | 6.7  | 13.5  | 11.0    |  |
| 20                            | Winter rye    | Green manured     | 0    | 5.0  | 0    | 0    | 0    | 5.3  | 7.2  | 8.7  | 0    | 0    | 18.7 | 6.5  |      |      |      |      |      |      | 51.4  | 4.7     |  |
| 21                            | do            | do                | 0    | 7.2  | 0    | 0    | 0    | 7.5  |      |      |      |      |      |      |      |      |      |      |      |      | 14.7  | 2.9     |  |
| 22                            | do            | do                | 0    | 8.0  | 0    | 0    | 0    | 2.4  |      |      |      |      |      |      |      |      |      |      |      |      | 10.4  | 2.1     |  |
| 23                            | do            | do                | 0    | 5.5  | 0    | 5.9  | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 56.9  | 5.2     |  |
| 24                            | Corn          | Disked            | 0    | 7.3  | 0    | 0    | 0    | 16.8 | 16.8 | 0    | 0    | 0    | 20.0 | 0    |      |      |      |      |      |      | 78.1  | 7.1     |  |
| 25                            | Fallow        | Fallow            | 0    | 7.3  | 0    | 0    | 0    | 16.8 | 25.6 | 6.8  | 0    | 0    | 19.3 | 2.3  |      |      |      |      |      |      | 90.2  | 8.2     |  |
| 26                            | Potatoes      | Disked            | 0    | 7.3  | 0    | 0    | 0    | 7.3  | 12.8 | 1.2  | 0    | 0    | 16.3 | 4.0  | 13.8 |      | 1.8  | 24.5 | 12.3 | 3.5  |       |         |  |
| 27                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |  |
| 28                            | Winter rye    | Green manured     | 0    | 3.0  | 0    | 0    | 0    | 14.5 | 16.8 | 7.2  | 0    | 0    | 18.7 | 4.2  |      |      |      |      |      |      | 66.4  | 6.0     |  |
| 29                            | do            | do                | 0    | 5.0  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.7   | .9      |  |
| 30                            | do            | do                | 0    | 3.7  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.8   | 1.2     |  |
| 31                            | do            | do                | 0    | 4.8  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.0   | 1.3     |  |
| 32                            | do            | do                | 0    | 5.0  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.0   | 1.3     |  |
| 33                            | do            | do                | 0    | 5.0  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.0   | 1.3     |  |
| 34                            | Corn          | Disked            | 0    | 5.0  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 37.8  | 9.5     |  |
| 35                            | Fallow        | Fallow            | 0    | 5.3  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 68.1  | 9.0     |  |
| 36                            | Cowpeas       | Disked            | 0    | 5.3  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.7   | 2.8     |  |
| 37                            | Winter wheat  | Fall plowed       | 0    | 5.3  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 6.0   | 6.0     |  |
| 38                            | Cowpeas       | Disked            | 0    | 5.0  | 0    | 0    | 0    |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.3   | 1.3     |  |
| 39                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.7   | 2.7     |  |
| 40                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 6.0   | 6.0     |  |
| 41                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.2   | 2.2     |  |
| 42                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.2   | 4.2     |  |
| 43                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.3   | 3.3     |  |
| 44                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.2   | 2.2     |  |
| 45                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 46                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 47                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 48                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 49                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 50                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 51                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 52                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 53                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 54                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 55                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 56                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 57                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 58                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 59                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 60                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 61                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 62                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 63                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 64                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 65                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 66                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 67                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 68                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 69                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 70                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 71                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 72                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 73                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 74                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 75                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 76                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 77                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 78                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 79                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 80                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 81                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 82                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 83                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 84                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 85                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 86                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 87                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 88                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 89                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 90                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 13.7  | 13.7    |  |
| 91                            | do            | do                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |  |



|  | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. | 17. | 18. | 19. | 20. | 21. | 22. | 23. | 24. | 25. | 26. | 27. | 28. | 29. | 30. | 31. | 32. | 33. | 34. | 35. | 36. | 37. | 38. | 39. | 40. | 41. | 42. | 43. | 44. | 45. | 46. | 47. | 48. | 49. | 50. | 51. | 52. | 53. | 54. | 55. | 56. | 57. | 58. | 59. | 60. | 61. | 62. | 63. | 64. | 65. | 66. | 67. | 68. | 69. | 70. | 71. | 72. | 73. | 74. | 75. | 76. | 77. | 78. | 79. | 80. | 81. | 82. | 83. | 84. | 85. | 86. | 87. | 88. | 89. | 90. | 91. | 92. | 93. | 94. | 95. | 96. | 97. | 98. | 99. | 100. | 101. | 102. | 103. | 104. | 105. | 106. | 107. | 108. | 109. | 110. | 111. | 112. | 113. | 114. | 115. | 116. | 117. | 118. | 119. | 120. | 121. | 122. | 123. | 124. | 125. | 126. | 127. | 128. | 129. | 130. | 131. | 132. | 133. | 134. | 135. | 136. | 137. | 138. | 139. | 140. | 141. | 142. | 143. | 144. | 145. | 146. | 147. | 148. | 149. | 150. | 151. | 152. | 153. | 154. | 155. | 156. | 157. | 158. | 159. | 160. | 161. | 162. | 163. | 164. | 165. | 166. | 167. | 168. | 169. | 170. | 171. | 172. | 173. | 174. | 175. | 176. | 177. | 178. | 179. | 180. | 181. | 182. | 183. | 184. | 185. | 186. | 187. | 188. | 189. | 190. | 191. | 192. | 193. | 194. | 195. | 196. | 197. | 198. | 199. | 200. | 201. | 202. | 203. | 204. | 205. | 206. | 207. | 208. | 209. | 210. | 211. | 212. | 213. | 214. | 215. | 216. | 217. | 218. | 219. | 220. | 221. | 222. | 223. | 224. | 225. | 226. | 227. | 228. | 229. | 230. | 231. | 232. | 233. | 234. | 235. | 236. | 237. | 238. | 239. | 240. | 241. | 242. | 243. | 244. | 245. | 246. | 247. | 248. | 249. | 250. | 251. | 252. | 253. | 254. | 255. | 256. | 257. | 258. | 259. | 260. | 261. | 262. | 263. | 264. | 265. | 266. | 267. | 268. | 269. | 270. | 271. | 272. | 273. | 274. | 275. | 276. | 277. | 278. | 279. | 280. | 281. | 282. | 283. | 284. | 285. | 286. | 287. | 288. | 289. | 290. | 291. | 292. | 293. | 294. | 295. | 296. | 297. | 298. | 299. | 300. | 301. | 302. | 303. | 304. | 305. | 306. | 307. | 308. | 309. | 310. | 311. | 312. | 313. | 314. | 315. | 316. | 317. | 318. | 319. | 320. | 321. | 322. | 323. | 324. | 325. | 326. | 327. | 328. | 329. | 330. | 331. | 332. | 333. | 334. | 335. | 336. | 337. | 338. | 339. | 340. | 341. | 342. | 343. | 344. | 345. | 346. | 347. | 348. | 349. | 350. | 351. | 352. | 353. | 354. | 355. | 356. | 357. | 358. | 359. | 360. | 361. | 362. | 363. | 364. | 365. | 366. | 367. | 368. | 369. | 370. | 371. | 372. | 373. | 374. | 375. | 376. | 377. | 378. | 379. | 380. | 381. | 382. | 383. | 384. | 385. | 386. | 387. | 388. | 389. | 390. | 391. | 392. | 393. | 394. | 395. | 396. | 397. | 398. | 399. | 400. | 401. | 402. | 403. | 404. | 405. | 406. | 407. | 408. | 409. | 410. | 411. | 412. | 413. | 414. | 415. | 416. | 417. | 418. | 419. | 420. | 421. | 422. | 423. | 424. | 425. | 426. | 427. | 428. | 429. | 430. | 431. | 432. | 433. | 434. | 435. | 436. | 437. | 438. | 439. | 440. | 441. | 442. | 443. | 444. | 445. | 446. | 447. | 448. | 449. | 450. | 451. | 452. | 453. | 454. | 455. | 456. | 457. | 458. | 459. | 460. | 461. | 462. | 463. | 464. | 465. | 466. | 467. | 468. | 469. | 470. | 471. | 472. | 473. | 474. | 475. | 476. | 477. | 478. | 479. | 480. | 481. | 482. | 483. | 484. | 485. | 486. | 487. | 488. | 489. | 490. | 491. | 492. | 493. | 494. | 495. | 496. | 497. | 498. | 499. | 500. | 501. | 502. | 503. | 504. | 505. | 506. | 507. | 508. | 509. | 510. | 511. | 512. | 513. | 514. | 515. | 516. | 517. | 518. | 519. | 520. | 521. | 522. | 523. | 524. | 525. | 526. | 527. | 528. | 529. | 530. | 531. | 532. | 533. | 534. | 535. | 536. | 537. | 538. | 539. | 540. | 541. | 542. | 543. | 544. | 545. | 546. | 547. | 548. | 549. | 550. | 551. | 552. | 553. | 554. | 555. | 556. | 557. | 558. | 559. | 560. | 561. | 562. | 563. | 564. | 565. | 566. | 567. | 568. | 569. | 570. | 571. | 572. | 573. | 574. | 575. | 576. | 577. | 578. | 579. | 580. | 581. | 582. | 583. | 584. | 585. | 586. | 587. | 588. | 589. | 590. | 591. | 592. | 593. | 594. | 595. | 596. | 597. | 598. | 599. | 600. | 601. | 602. | 603. | 604. | 605. | 606. | 607. | 608. | 609. | 610. | 611. | 612. | 613. | 614. | 615. | 616. | 617. | 618. | 619. | 620. | 621. | 622. | 623. | 624. | 625. | 626. | 627. | 628. | 629. | 630. | 631. | 632. | 633. | 634. | 635. | 636. | 637. | 638. | 639. | 640. | 641. | 642. | 643. | 644. | 645. | 646. | 647. | 648. | 649. | 650. | 651. | 652. | 653. | 654. | 655. | 656. | 657. | 658. | 659. | 660. | 661. | 662. | 663. | 664. | 665. | 666. | 667. | 668. | 669. | 670. | 671. | 672. | 673. | 674. | 675. | 676. | 677. | 678. | 679. | 680. | 681. | 682. | 683. | 684. | 685. | 686. | 687. | 688. | 689. | 690. | 691. | 692. | 693. | 694. | 695. | 696. | 697. | 698. | 699. | 700. | 701. | 702. | 703. | 704. | 705. | 706. | 707. | 708. | 709. | 710. | 711. | 712. | 713. | 714. | 715. | 716. | 717. | 718. | 719. | 720. | 721. | 722. | 723. | 724. | 725. | 726. | 727. | 728. | 729. | 730. | 731. | 732. | 733. | 734. | 735. | 736. | 737. | 738. | 739. | 740. | 741. | 742. | 743. | 744. | 745. | 746. | 747. | 748. | 749. | 750. | 751. | 752. | 753. | 754. | 755. | 756. | 757. | 758. | 759. | 760. | 761. | 762. | 763. | 764. | 765. | 766. | 767. | 768. | 769. | 770. | 771. | 772. | 773. | 774. | 775. | 776. | 777. | 778. | 779. | 780. | 781. | 782. | 783. | 784. | 785. | 786. | 787. | 788. | 789. | 790. | 791. | 792. | 793. | 794. | 795. | 796. | 797. | 798. | 799. | 800. | 801. | 802. | 803. | 804. | 805. | 806. | 807. | 808. | 809. | 810. | 811. | 812. | 813. | 814. | 815. | 816. | 817. | 818. | 819. | 820. | 821. | 822. | 823. | 824. | 825. | 826. | 827. | 828. | 829. | 830. | 831. | 832. | 833. | 834. | 835. | 836. | 837. | 838. | 839. | 840. | 841. | 842. | 843. | 844. | 845. | 846. | 847. | 848. | 849. | 850. | 851. | 852. | 853. | 854. | 855. | 856. | 857. | 858. | 859. | 860. | 861. | 862. | 863. | 864. | 865. | 866. | 867. | 868. | 869. | 870. | 871. | 872. | 873. | 874. | 875. | 876. | 877. | 878. | 879. | 880. | 881. | 882. | 883. | 884. | 885. | 886. | 887. | 888. | 889. | 890. | 891. | 892. | 893. | 894. | 895. | 896. | 897. | 898. | 899. | 900. | 901. | 902. | 903. | 904. | 905. | 906. | 907. | 908. | 909. | 910. | 911. | 912. | 913. | 914. | 915. | 916. | 917. | 918. | 919. | 920. | 921. | 922. | 923. | 924. | 925. | 926. | 927. | 928. | 929. | 930. | 931. | 932. | 933. | 934. | 935. | 936. | 937. | 938. | 939. | 940. | 941. | 942. | 943. | 944. | 945. | 946. | 947. | 948. | 949. | 950. | 951. | 952. | 953. | 954. | 955. | 956. | 957. | 958. | 959. | 960. | 961. | 962. | 963. | 964. | 965. | 966. | 967. | 968. | 969. | 970. | 971. | 972. | 973. | 974. | 975. | 976. | 977. | 978. | 979. | 980. | 981. | 982. | 983. | 984. | 985. | 986. | 987. | 988. | 989. | 990. | 991. | 992. | 993. | 994. | 995. | 996. | 997. | 998. | 999. | 1000. | 1001. | 1002. | 1003. | 1004. | 1005. | 1006. | 1007. | 1008. | 1009. | 1010. | 1011. | 1012. | 1013. | 1014. | 1015. | 1016. | 1017. | 1018. | 1019. | 1020. | 1021. | 1022. | 1023. | 1024. | 1025. | 1026. | 1027. | 1028. | 1029. | 1030. | 1031. | 1032. | 1033. | 1034. | 1035. | 1036. | 1037. | 1038. | 1039. | 1040. | 1041. | 1042. | 1043. | 1044. | 1045. | 1046. | 1047. | 1048. | 1049. | 1050. | 1051. | 1052. | 1053. | 1054. | 1055. | 1056. | 1057. | 1058. | 1059. | 1060. | 1061. | 1062. | 1063. | 1064. | 1065. | 1066. | 1067. | 1068. | 1069. | 1070. | 1071. | 1072. | 1073. | 1074. | 1075. | 1076. | 1077. | 1078. | 1079. | 1080. | 1081. | 1082. | 1083. | 1084. | 1085. | 1086. | 1087. | 1088. | 1089. | 1090. | 1091. | 1092. | 1093. | 1094. | 1095. | 1096. | 1097. | 1098. | 1099. | 1100. | 1101. | 1102. | 1103. | 1104. | 1105. | 1106. | 1107. | 1108. | 1109. | 1110. | 1111. | 1112. | 1113. | 1114. | 1115. | 1116. | 1117. | 1118. | 1119. | 1120. | 1121. | 1122. | 1123. | 1124. | 1125. | 1126. | 1127. | 1128. | 1129. | 1130. | 1131. | 1132. | 1133. | 1134. | 1135. | 1136. | 1137. | 1138. | 1139. | 1140. | 1141. | 1142. | 1143. | 1144. | 1145. | 1146. | 1147. | 1148. | 1149. | 1150. | 1151. | 1152. | 1153. | 1154. | 1155. | 1156. | 1157. | 1158. | 1159. | 1160. | 1161. | 1162. | 1163. | 1164. | 1165. | 1166. | 1167. | 1168. | 1169. | 1170. | 1171. | 1172. | 1173. | 1174. | 1175. | 1176. | 1177. | 1178. | 1179. | 1180. | 1181. | 1182. | 1183. | 1184. | 1185. | 1186. | 1187. | 1188. | 1189. | 1190. | 1191. | 1192. | 1193. | 1194. | 1195. | 1196. | 1197. | 1198. | 1199. | 1200. | 1201. | 1202. | 1203. | 1204. | 1205. | 1206. | 1207. | 1208. | 1209. | 1210. | 1211. | 1212. | 1213. | 1214. | 1215. | 1216. | 1217. | 1218. | 1219. | 1220. | 1221. | 1222. | 1223. | 1224. | 1225. | 1226. | 1227. | 1228. | 1229. | 1230. | 1231. | 1232. | 1233. | 1234. | 1235. | 1236. | 1237. | 1238. | 1239. | 1240. | 1241. | 1242. | 1243. | 1244. | 1245. | 1246. | 1247. | 1248. | 1249. | 1250. | 1251. | 1252. | 1253. | 1254. | 1255. | 1256. | 1257. | 1258. | 1259. | 1260. | 1261. | 1262. | 1263. | 1264. | 1265. | 1266. | 1267. | 1268. | 1269. | 1270. | 1271. | 1272. | 1273. | 1274. | 1275. | 1276. | 1277. | 1278. | 1279. | 1280. | 1281. | 1282. | 1283. | 1284. | 1285. | 1286. | 1287. | 1288. | 1289. | 1290. | 1291. | 1292. | 1293. | 1294. | 1295. | 1296. | 1297. | 1298. | 1299. | 1300. | 1301. | 1302. | 1303. | 1304. | 1305. | 1306. | 1307. | 1308. | 1309. | 1310. | 1311. | 1312. | 1313. | 1314. | 1315. | 1316. | 1317. | 1318. | 1319. | 1320. | 1321. | 1322. | 1323. | 1324. | 1325. | 1326. | 1327. | 1328. | 1329. | 1330. | 1331. | 1332. | 1333. | 1334. | 1335. | 1336. | 1337. | 1338. | 1339. | 1340. | 1341. | 1342. | 1343. | 1344. | 1345. | 1346. | 1347. | 1348. | 1349. | 1350. | 1351. | 1352. | 1353. | 1354. | 1355. | 1356. | 1357. | 1358. | 1359. | 1360. | 1361. | 1362. | 1363. | 1364. | 1365. | 1366. | 1367. | 1368. | 1369. | 1370. | 1371. | 1372. | 1373. | 1374. | 1375. | 1376. | 1377. | 1378. | 1379. | 1380. | 1381. | 1382. | 1383. | 1384. | 1385. | 1386. | 1387. | 1388. | 1389. | 1390. | 1391. | 1392. | 1393. | 1394. | 1395. | 1396. | 1397. | 1398. | 1399. | 1400. | 1401. | 1402. | 1403. | 1404. | 1405. | 1406. | 1407. | 1408. | 1409. | 1410. | 1411. | 1412. | 1413. | 1414. | 1415. | 1416. | 1417. | 1418. | 1419. | 1420. | 1421. | 1422. | 1423. | 1424. | 1425. | 1426. | 1427. | 1428. | 1429. | 1430. | 1431. | 1432. | 1433. | 1434. | 1435. | 1436. | 1437. | 1438. | 1439. | 1440. | 1441. | 1442. | 1443. | 1444. | 1445. | 1446. | 1447. | 1448. | 1449. | 1450. | 1451. | 1452. | 1453. | 1454. | 1455. | 1456. | 1457. | 1458. | 1459. | 1460. | 1461. | 1462. | 1463. | 1464. | 1465. | 1466. | 1467. | 1468. | 1469. | 1470. | 1471. | 1472. | 1473. | 1474. | 1475. | 1476. | 1477. | 1478. | 1479. | 1480. | 1481. | 1482. | 1483. | 1484. | 1485. | 1486. | 1487. | 1488 |
|--|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----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|--|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----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[illegible]



## CROP YIELDS AT THE GARDEN CITY (KANS.) FIELD STATION—Continued

TABLE 67.—Annual acre yields of specified crops grown in rotations on individual plots at Garden City, Kans., in one or more years from 1909 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>KAFIR TOTAL—con.</b>       |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 22                            | Winter wheat  | Fall plowed    | 6,080 | 6,950 | 2,220 | 6,440 | 1,560 |       |       | 1,940 | 940   | 1,050 | 1,120 | 5,000 | 2,860 | 3,500 | 1,700 | 2,020 | 0     |       | 17,170 | 4,263   |
| 83                            | Sudan grass   | Spring listed  | 5,480 | 7,800 | 560   | 8,000 | 1,300 |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 19,910 | 1,991   |
| 93                            | Winter wheat  | Fall plowed    |       |       |       |       |       |       |       |       |       | 1,050 | 1,050 | 5,000 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 17,720 | 4,430   |
| 161                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 32,450 | 4,055   |
| 162                           | do.           | Spring plowed  |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 31,280 | 3,910   |
| 163                           | Cowpeas       | Fall plowed    |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 36,840 | 4,605   |
| 165                           | Milo          | Spring plowed  |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 38,480 | 4,810   |
| 167                           | Winter wheat  | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 32,860 | 4,108   |
| 168                           | Fallow        | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 32,860 | 4,108   |
| 169                           | Cowpeas       | Spring plowed  |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 32,860 | 4,108   |
| 213                           | Sudan grass   | Spring listed  |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 33,050 | 4,131   |
| 321                           | Milo          | Fall listed    |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 33,050 | 4,131   |
| 322a                          | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 27,070 | 3,867   |
| 322b                          | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 27,210 | 3,887   |
| 323a                          | Kafir         | Fall listed    |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 26,414 | 3,813   |
| 323b                          | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 26,414 | 3,813   |
| 324                           | Winter wheat  | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 40,220 | 4,409   |
| 331a                          | Winter rye    | Green manured  |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 43,500 | 3,346   |
| 331b                          | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 40,900 | 3,915   |
| 332a                          | Winter wheat  | Fall listed    |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 46,000 | 5,118   |
| 332b                          | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 46,000 | 5,118   |
| 405                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,050 | 4,580 | 6,440 | 3,700 | 2,900 | 3,500 | 5,820 | 2,350 |       | 44,860 | 3,734   |
| Average                       |               |                | 7,375 | 1,390 | 7,250 | 1,430 | 2,400 | 2,382 | 4,354 | 1,996 | 2,177 | 1,474 | 4,919 | 6,332 | 3,415 | 3,592 | 3,684 | 5,278 | 3,539 | 3,408 | 34,697 | 4,032   |
| *1                            | Kafir         | Listed         |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *2                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *3                            | do.           | Spring listed  |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *4                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *5                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *6                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *7                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *8                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *9                            | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *10                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *11                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *12                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *13                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *14                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *15                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| *16                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 900   | 2,860 | 9,000 | 3,900 | 4,000 | 1,700 | 4,490 | 4,420 | 3,000 | 45,370 | 3,490   |
| Average                       |               |                | 7,375 | 1,390 | 7,250 | 1,430 | 2,400 | 2,382 | 4,354 | 1,996 | 2,177 | 1,474 | 4,919 | 6,332 | 3,415 | 3,592 | 3,684 | 5,278 | 3,539 | 3,408 | 34,697 | 4,032   |
| <b>Kafir fodder:</b>          |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| *9                            | Kafir         | Fall plowed    |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *11                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *12                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *13                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *14                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *15                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *16                           | do.           | do.            |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *27 or 29                     | Fallow        | Fallow         |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| *28 or 30                     | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| <b>KAFIR GRAIN</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| B                             | do.           | Fall plowed    |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| C                             | do.           | Fall listed    |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       | 240   | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 3,320 | 4,100 | 9,220  | 2,305   |
| *23 or 25                     | Fallow        | Fallow         |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| *24 or 26                     | do.           | do.            |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| Average                       |               |                |       |       |       |       |       |       |       |       |       | 1,440 | 3,120 | 5,400 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 2,640 | 91,490 | 7,038   |
| 22                            | Winter wheat  | Fall plowed    |       |       |       |       |       |       |       |       |       | 1,2   | 24.2  | 32.7  | 16.5  | 18.5  | 19.7  | 36.8  | 3.2   | 5.8   | 214.7  | 12.0    |
| 83                            | Sudan grass   | Spring listed  |       |       |       |       |       |       |       |       |       | 1.2   | 24.2  | 32.7  | 16.5  | 18.5  | 19.7  | 36.8  | 3.2   | 5.8   | 214.7  | 12.0    |
| 93                            | Winter wheat  | Fall plowed    |       |       |       |       |       |       |       |       |       | 1.2   | 24.2  | 32.7  | 16.5  | 18.5  | 19.7  | 36.8  | 3.2   | 5.8   | 214.7  | 12.0    |
| Average                       |               |                |       |       |       |       |       |       |       |       |       | 1.2   | 24.2  | 32.7  | 16.5  | 18.5  | 19.7  | 36.8  | 3.2   | 5.8   | 214.7  | 12.0    |





## CROP YIELDS AT THE WOODWARD (OKLA.) FIELD STATION

TABLE 68.—Annual acre yields of specified crops grown in rotations on individual plots at Woodward, Okla., in one or more years from 1914 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1915 to 1924, see Figure 36 (p. 54), Miscellaneous Circular No. 81. Yields of total weight of corn, sweetclover, kafir, sorgho, winter rye, hay, cowpea hay, Sudan grass, broomcorn, peanuts, and cotton are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop | Tillage methods   | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| Aa                            | Winter wheat  | Late fall plowed  | 0     | 16.0  | 2.2   | 2.2   | 0     | 13.7  | 9.8   | 23.8  | 13.3  | 17.0  | 13.7  | 5.5   | 12.5  | 129.7  | 10.8    |
| Ah                            | do            | do                |       |       |       |       |       | 19.2  | 12.3  | 24.8  | 9.3   | 13.2  | 17.5  | 3.7   | 10.8  | 91.6   | 13.1    |
| Ba                            | do            | Early fall plowed | 0     | 27.6  | 4.5   | 7.2   | 6.0   | 12.2  | 9.8   | 28.3  | 27.2  | 22.3  | 10.3  | 18.5  | 20.8  | 194.7  | 16.2    |
| Bb                            | do            | do                |       |       |       |       |       | 16.2  | 13.5  | 28.7  | 38.3  | 2.0   | 27.3  | 22.7  | 11.5  | 144.0  | 20.6    |
| E                             | do            | Subsoiled         | 0     | 29.1  | 3.6   | 7.5   | 8.8   |       |       |       |       |       |       |       |       | 49.0   | 12.3    |
| F                             | do            | Fall listed       | 0     | 23.8  | 4.2   | 4.3   | 6.2   | 15.8  | 19.5  | 29.5  | 28.5  | 14.5  | 13.5  | 18.8  | 20.5  | 199.1  | 16.6    |
| G                             | do            | do                | 0     | 21.2  | 4.5   | 4.2   | 9.7   |       |       |       |       |       |       |       |       | 39.6   | 9.9     |
| X                             | do            | Disked            |       |       |       |       |       |       |       | 33.0  | 8.2   | 12.2  | 15.8  | 8.7   | 12.8  | 57.7   | 11.5    |
| Y                             | do            | Early fall plowed |       |       |       |       |       |       |       | 14.5  | 35.3  | 9.8   | 22.3  | 20.2  | 16.7  | 104.3  | 20.9    |
| Z                             | do            | Disked            |       |       |       |       |       |       |       | 15.5  | 34.5  | 14.0  | 17.8  | 16.7  | 20.7  | 103.7  | 20.7    |
| Average                       |               |                   |       | 23.5  | 3.8   | 5.1   | 6.1   | 13.9  | 13.0  | 27.0  | 24.3  | 13.1  | 17.3  | 14.4  | 15.8  | 111.3  | 15.3    |
| C or D                        | Fallow        | Fallowed          | 0     | 31.8  | 2.8   | 11.5  | 9.8   | 13.7  | 12.5  | 32.8  | 34.5  | 35.8  | 7.5   | 20.8  | 29.7  | 243.2  | 20.3    |
| 151                           | do            | do                | 0     | 26.6  | 2.1   | 14.2  | 8.2   | 13.5  | 20.0  | 33.2  | 35.3  | 22.5  | 12.8  | 24.2  | 22.7  | 235.3  | 19.6    |
| 152                           | Corn          | Disked            | 0     | 23.5  | 1.3   | 8.2   | 6.3   | 14.8  | 18.3  | 27.5  | 15.8  | 25.3  | 22.0  | 22.5  | 22.5  | 214.0  | 17.8    |
| 153                           | Winter rye    | Green manured     | 0     | 30.9  | 1.0   | 10.0  | 6.3   | 19.8  | 18.7  | 28.8  | 28.8  | 29.8  | 15.0  | 20.5  | 21.2  | 230.8  | 19.2    |
| 154                           | Fallow        | Fallowed          | 0     | 31.1  | 1.8   | 11.3  | 9.5   | 15.4  | 19.8  | 27.3  | 34.7  | 25.8  | 14.2  | 19.3  | 26.0  | 236.2  | 19.7    |
| 155                           | do            | do                | 0     | 31.2  | 1.8   | 10.5  | 9.2   | 12.5  | 12.3  | 27.2  | 30.3  | 14.7  | 9.3   | 17.5  | 25.5  | 202.0  | 16.8    |
| 156                           | do            | do                | 0     | 27.7  | 3.3   | 13.5  | 8.3   | 17.1  | 24.7  | 30.7  | 36.2  | 31.8  | 20.5  | 26.0  | 28.8  | 268.6  | 22.4    |
| 164                           | Cowpeas       | Disked            |       |       |       |       |       | 12.7  | 14.2  | 30.7  | 24.5  | 19.7  | 29.3  | 41.2  | 21.8  | 181.4  | 25.9    |
| 166                           | Winter wheat  | Fall plowed       |       |       |       |       |       |       | 18.2  | 32.7  | 22.0  | 34.5  | 33.3  | 32.7  | 30.5  | 203.9  | 29.1    |
| 167                           | Cowpeas       | Disked            |       |       |       |       |       | 16.3  | 9.8   | 28.5  | 22.8  | 16.8  | 22.3  | 25.2  | 25.7  | 154.1  | 22.0    |
| 262                           | do            | do                |       |       |       |       |       | 15.7  | 7.5   | 28.3  | 14.2  | 13.3  | 20.3  | 23.5  | 23.5  | 150.6  | 18.7    |
| 263                           | Corn          | do                |       |       |       |       |       | 11.4  | 9.7   | 24.0  | 23.2  | 5.7   | 26.7  | 19.7  | 25.0  | 134.0  | 19.1    |
| 264                           | Milo          | do                |       |       |       |       |       | 13.8  | 6.8   | 22.7  | 16.7  | 6.0   | 17.5  | 9.0   | 17.2  | 95.9   | 13.7    |
| 265                           | Kafir         | do                |       |       |       |       |       | 14.3  | 9.0   | 26.0  | 17.3  | 7.2   | 26.2  | 17.5  | 18.7  | 121.9  | 17.4    |
| 402                           | Cowpeas       | do                |       |       |       |       |       | 13.3  | 7.5   | 28.0  | 10.7  | 5.5   | 28.8  | 13.0  | 20.8  | 114.3  | 16.3    |
| 570                           | Fallow        | Fallowed          | 0     | 24.8  | 1.7   | 9.2   | 8.0   | 8.6   | 15.0  | 27.3  | 27.3  | 24.3  | 15.0  | 20.3  | 19.0  | 200.5  | 16.7    |
|                               | do            | do                | 0     | 28.2  | 2.7   | 12.3  | 13.3  | 19.5  | 8.7   | 30.0  | 36.0  | 33.0  | 16.2  | 24.7  | 28.2  | 252.8  | 21.1    |
| Average                       |               |                   |       | 28.8  | 2.0   | 11.1  | 8.6   | 15.2  | 13.8  | 28.3  | 24.7  | 19.7  | 20.6  | 22.5  | 23.6  | 186.0  | 19.7    |
| SPRING WHEAT                  |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Wheat         | Spring plowed     | 0     | 6.1   | 0     | 0     |       |       |       |       |       |       |       |       |       | 6.1    | 2.0     |
| B                             | do            | Fall plowed       | 0     | 8.1   | 0     | 0     |       |       |       |       |       |       |       |       |       | 8.1    | 2.7     |
| F                             | do            | Fall listed       | 0     | 7.8   | 0     | 0     |       |       |       |       |       |       |       |       |       | 7.8    | 2.6     |
| Average                       |               |                   |       | 7.3   | 0     | 0     |       |       |       |       |       |       |       |       |       | 7.3    | 2.4     |
| C or D                        | Fallow        | Fallowed          | 0     | 11.3  | 0     | 3.7   |       |       |       |       |       |       |       |       |       | 15.0   | 5.0     |
| 1                             | Corn          | Disked            | 0     | 6.3   | 1.0   | 0     |       |       |       |       |       |       |       |       |       | 7.3    | 2.4     |
| 2                             | do            | Spring plowed     | 0     | 13.8  | 2.2   | 0     |       |       |       |       |       |       |       |       |       | 16.0   | 5.3     |
| 3                             | do            | Fall plowed       | 0     | 16.4  | .7    | 1.7   |       |       |       |       |       |       |       |       |       | 18.8   | 6.3     |
| 4                             | Oats          | do                | 0     | 14.7  | 0     | 2.0   |       |       |       |       |       |       |       |       |       | 16.7   | 5.6     |
| 5                             | Fallow        | Fallowed          | 0     | 16.8  | 1.3   | 5.0   |       |       |       |       |       |       |       |       |       | 23.1   | 7.7     |
| 8                             | Oats          | Fall plowed       | 0     | 16.3  | 0     | 0     |       |       |       |       |       |       |       |       |       | 16.3   | 5.4     |
| 9                             | do            | Spring plowed     | 0     | 12.2  | 0     | 1.2   |       |       |       |       |       |       |       |       |       | 13.4   | 4.5     |
| Average                       |               |                   |       | 13.8  | .7    | 1.4   |       |       |       |       |       |       |       |       |       | 15.9   | 5.3     |
| OATS                          |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Oats          | Spring plowed     | 0     | 21.1  | 0     | 0     |       |       |       |       |       |       |       |       |       | 21.1   | 7.0     |
| B                             | do            | Fall plowed       | 2.5   | 21.7  | 0     | 0     |       |       |       |       |       |       |       |       |       | 21.7   | 7.2     |
| F                             | do            | Fall listed       | 0     | 13.6  | 0     | 0     |       |       |       |       |       |       |       |       |       | 13.6   | 4.5     |
| Average                       |               |                   |       | 18.8  | 0     | 0     |       |       |       |       |       |       |       |       |       | 18.8   | 6.2     |
| C or D                        | Fallow        | Fallowed          | 0     | 22.0  | 0     | 7.8   |       |       |       |       |       |       |       |       |       | 29.8   | 9.9     |
| 1                             | Wheat         | Fall plowed       | 3.0   | 32.2  | 1.9   | 0     |       |       |       |       |       |       |       |       |       | 34.1   | 11.4    |
| 2                             | do            | Spring plowed     | 3.6   | 27.6  | 0     | 0     |       |       |       |       |       |       |       |       |       | 27.6   | 9.2     |
| 3                             | do            | Fall plowed       | 5.2   | 28.3  | 1.6   | 0     |       |       |       |       |       |       |       |       |       | 29.9   | 10.0    |
| 4                             | Corn          | Disked            | 1.7   | 18.0  | 1.3   | 0     |       |       |       |       |       |       |       |       |       | 19.3   | 6.4     |
| 5                             | Wheat         | Fall plowed       | 2.2   | 27.6  | 1.9   | 0     |       |       |       |       |       |       |       |       |       | 29.5   | 9.8     |
| 6                             | do            | do                | 1.1   | 23.0  | 1.9   | 0     |       |       |       |       |       |       |       |       |       | 24.9   | 8.3     |
| 7                             | Barley        | Spring plowed     | 1.4   | 18.6  | 1.3   | 0     |       |       |       |       |       |       |       |       |       | 19.9   | 6.6     |
| 8                             | Fallow        | Fallowed          | 4.2   | 33.4  | 2.2   | 10.3  |       |       |       |       |       |       |       |       |       | 45.9   | 15.3    |
| 9                             | Corn          | Spring plowed     | 5.3   | 32.6  | .6    | 0     |       |       |       |       |       |       |       |       |       | 33.2   | 11.1    |
| Average                       |               |                   |       | 26.8  | 1.4   | 1.1   |       |       |       |       |       |       |       |       |       | 29.4   | 9.8     |
| CORN TOTAL                    |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Corn          | Spring plowed     | 4,270 | 4,670 | 4,944 | 0     | 1,670 | 2,190 | 3,560 | 2,500 | 690   | 2,880 | 1,250 | 1,130 | 3,875 | 29,359 | 2,447   |
| B                             | do            | Fall plowed       | 3,510 | 3,611 | 5,300 | 0     | 1,850 | 2,125 | 3,000 | 2,690 | 880   | 1,560 | 1,560 | 2,940 | 3,563 | 29,079 | 2,423   |
| E                             | do            | Subsoiled         | 3,699 | 3,600 | 5,944 | 0     | 2,220 | 2,625 | 2,810 | 2,750 | 880   | 1,560 | 1,630 | 2,500 | 2,940 | 29,459 | 2,455   |
| F                             | do            | Spring listed     | 2,680 | 3,050 | 3,150 | 0     | 1,300 | 1,438 | 2,250 | 2,000 | 560   | 750   | 1,250 | 2,190 | 2,125 | 20,063 | 1,672   |
| G                             | do            | do                | 2,610 | 2,900 | 3,111 | 0     | 1,170 | 1,813 | 2,250 | 1,500 | 500   | 630   | 1,030 | 1,139 | 2,060 | 18,094 | 1,508   |
| Average                       |               |                   |       | 3,566 | 4,490 | 0     | 1,642 | 2,038 | 2,774 | 2,288 | 702   | 1,476 | 1,344 | 1,978 | 2,913 | 25,211 | 2,101   |
| C or D                        | Fallow        | Fallowed          | 4,029 | 4,056 | 4,888 | 2,300 | 1,950 | 2,313 | 3,880 | 3,380 | 1,130 | 2,400 | 1,810 | 2,440 | 4,125 | 34,672 | 2,889   |
| 1                             | Oats          | Fall plowed       | 3,510 | 4,400 | 4,400 | 0     |       |       |       |       |       |       |       |       |       | 8,800  | 2,933   |
| 2                             | do            | Spring plowed     | 3,530 | 3,900 | 3,700 | 0     |       |       |       |       |       |       |       |       |       | 7,630  | 2,533   |
| 3                             | do            | Fall plowed       | 3,430 | 3,900 | 3,700 | 0     |       |       |       |       |       |       |       |       |       | 7,600  | 2,533   |
| 4                             | Wheat         | do                | 2,663 | 3,700 | 3,850 | 0     |       |       |       |       |       |       |       |       |       | 7,550  | 2,517   |
| 6                             | Oats          | do                | 2,460 | 3,250 | 3,550 | 0     |       |       |       |       |       |       |       |       |       | 6,800  | 2,267   |
| 7                             | Barley        | Spring plowed     | 2,540 | 3,900 | 3,100 | 0     |       |       |       |       |       |       |       |       |       | 7,000  | 2,333   |
| 9                             | Wheat         | do                | 3,490 | 3,940 | 3,250 | 0     |       |       |       |       |       |       |       |       |       | 7,190  | 2,397   |
| 88                            | Winter rye    | Fall plowed       | 2,960 | 4,150 | 4,350 | 0     | 1,750 | 2,400 | 3,440 | 2,810 | 1,130 | 3,000 | 1,500 | 1,810 | 3,750 | 30,180 | 2,515   |
| 89                            | do            | do                | 2,970 | 4,150 | 3,650 | 0     | 1,350 | 1,750 | 3,190 | 1,850 | 1,960 | 3,630 | 1,130 | 1,190 | 4,440 | 27,420 | 2,285   |
| 152                           | Milo          | Spring plowed     | 3,920 | 2,900 | 3,350 | 0     | 1,700 | 1,780 | 3,450 | 3,200 | 1,000 | 2,130 | 1,280 | 2,940 | 3,600 | 27,339 | 2,278   |
| 153                           | Winter wheat  | Fall plowed       | 3,000 | 3,000 | 2,850 | 0     | 1,350 | 1,560 | 3,200 | 2,900 | 1,000 | 1,810 | 1,550 | 2,310 | 3,000 | 24,530 | 2,044   |



## CROP YIELDS AT THE WOODWARD (OKLA.) FIELD STATION—Continued

TABLE 68.—Annual acre yields of specified crops grown in rotations on individual plots at Woodward, Okla., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage methods   | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CORN TOTAL—con.               |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 262                           | Winter wheat  | Fall plowed       |       |       |       |       | (1)   | 2,100 | 3,880 | 3,560 | 1,500 | 3,813 | 1,875 | 2,000 | 4,625 | 23,353 | 2,919   |
| 282                           | Kafir         | Spring plowed     |       |       |       |       | (1)   | 2,100 | 3,063 | 3,623 | 1,000 | 2,063 | 1,563 | 2,500 | 4,880 | 20,792 | 2,599   |
| Average                       |               |                   |       | 3,745 | 3,614 | 0     | 1,538 | 1,948 | 3,371 | 2,996 | 1,115 | 2,741 | 1,498 | 2,125 | 4,049 | 15,857 | 2,472   |
| CORN GRAIN                    |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Corn          | Spring plowed     | 0     | 26.2  | 0     | 0     | 0     | 0     | 17.7  | 18.2  | 2.9   | 8.7   | 9.6   | 1.3   | 20.7  | 105.3  | 8.8     |
| B                             | do.           | Fall plowed       | 0     | 20.5  | 0     | 0     | 0     | 0     | 16.3  | 16.6  | 1.3   | 4.0   | 10.7  | 3.9   | 20.5  | 93.8   | 7.8     |
| E                             | do.           | Subsoiled         | 0     | 21.3  | 0     | 0     | 0     | 0     | 10.5  | 19.1  | 2.5   | 2.4   | 10.7  | 8.2   | 18.0  | 92.7   | 7.7     |
| F                             | do.           | Spring listed     | 0     | 19.6  | 0     | 0     | 0     | 0     | 14.2  | 12.0  | 1.3   | 1.1   | 7.1   | 1.8   | 13.4  | 70.5   | 5.9     |
| G                             | do.           | do.               | 0     | 17.0  | 0     | 0     | 0     | 0     | 10.2  | 10.0  | .7    | .7    | 5.5   | 2.3   | 11.8  | 58.2   | 4.9     |
| Average                       |               |                   |       | 20.9  | 0     | 0     | 0     | 0     | 13.8  | 15.2  | 1.7   | 3.4   | 8.7   | 3.5   | 16.9  | 84.1   | 7.0     |
| C or D                        | Fallow        | Fallowed          | 0     | 24.4  | 0     | 0     | 0     | 0     | 20.8  | 23.7  | 3.2   | 6.9   | 10.5  | 5.5   | 21.6  | 116.6  | 9.7     |
| 1                             | Oats          | Fall plowed       | 0     | 24.1  | 13.4  | 0     |       |       |       |       |       |       |       |       |       | 37.5   | 12.5    |
| 2                             | do.           | Spring plowed     | 0     | 24.4  | 11.6  | 0     |       |       |       |       |       |       |       |       |       | 36.0   | 12.0    |
| 3                             | do.           | Fall plowed       | 0     | 23.0  | 6.7   | 0     |       |       |       |       |       |       |       |       |       | 29.7   | 9.9     |
| 4                             | Wheat         | do.               | 0     | 22.7  | 10.4  | 0     |       |       |       |       |       |       |       |       |       | 33.1   | 11.0    |
| 6                             | Oats          | do.               | 0     | 22.4  | 9.9   | 0     |       |       |       |       |       |       |       |       |       | 32.3   | 10.8    |
| 7                             | Barley        | Spring plowed     | 0     | 22.1  | 11.6  | 0     |       |       |       |       |       |       |       |       |       | 32.7   | 11.2    |
| 9                             | Wheat         | do.               | 0     | 24.0  | 8.1   | 0     |       |       |       |       |       |       |       |       |       | 32.1   | 10.7    |
| 88                            | Winter rye    | Fall plowed       | 0     | 22.4  | 0     | 0     | 0     | 0     | 11.3  | 20.4  | 3.4   | 7.9   | 10.5  | 5.5   | 17.0  | 98.4   | 8.2     |
| 89                            | do.           | do.               | 0     | 17.0  | 0     | 0     | 0     | 0     | 9.5   | 16.3  | 3.6   | 11.6  | 6.4   | 2.1   | 15.9  | 82.4   | 6.9     |
| 152                           | Milo          | Spring plowed     | 0     | 17.4  | 10.4  | 0     | 0     | 0     | 15.6  | 22.6  | 3.3   | 5.1   | 8.1   | 6.3   | 18.0  | 106.8  | 8.9     |
| 153                           | Winter wheat  | Fall plowed       | 0     | 19.4  | 6.0   | 0     | 0     | 0     | 15.9  | 18.3  | 2.3   | 2.0   | 7.3   | 4.1   | 14.1  | 89.4   | 7.5     |
| 262                           | do.           | do.               |       |       |       |       | (1)   | 0     | 9.5   | 25.5  | 1.8   | 12.5  | 11.4  | 3.6   | 23.8  | 88.1   | 11.0    |
| 282                           | Kafir         | Spring plowed     |       |       |       |       | (1)   | 0     | 3.2   | 26.4  | 3.9   | 6.4   | 10.0  | 1.8   | 21.4  | 73.1   | 9.1     |
| Average                       |               |                   |       | 21.7  | 8.0   | 0     | 0     | 0     | 10.8  | 21.6  | 3.1   | 7.6   | 9.0   | 3.9   | 18.4  | 70.2   | 11.8    |
| BARLEY                        |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 6                             | Corn          | Disked            | 0     | 6.9   | 1.9   | 2.3   |       |       |       |       |       |       |       |       |       | 11.1   | 3.7     |
| 7                             | Oats          | Spring plowed     | 0     | 10.4  | 0     | 1.9   |       |       |       |       |       |       |       |       |       | 12.3   | 4.1     |
| Average                       |               |                   |       | 8.7   | 1.0   | 2.1   |       |       |       |       |       |       |       |       |       | 11.7   | 3.9     |
| WINTER RYE                    |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Winter rye    | Late fall plowed  |       |       |       |       |       | 13.5  | 5.5   | 10.9  | 7.9   | 8.4   | 8.4   | 3.0   | 8.6   | 66.2   | 8.3     |
| B                             | do.           | Early fall plowed |       |       |       |       |       | 14.9  | 9.6   | 20.7  | 19.3  | 16.3  | 8.8   | 9.1   | 13.0  | 111.7  | 14.0    |
| E                             | do.           | Subsoiled         |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| F                             | do.           | Fall listed       |       |       |       |       |       | 20.0  | 10.4  | 17.9  | 17.0  | 11.8  | 7.3   | 7.5   | 9.3   | 101.2  | 12.7    |
| X                             | do.           | Disked            |       |       |       |       |       |       | 5.7   | 18.6  | 5.1   | 12.3  | 12.7  | 5.4   | 9.5   | 63.6   | 10.6    |
| Y                             | do.           | Early fall plowed |       |       |       |       |       |       | 3.2   | 17.9  | 33.0  | 20.7  | 14.8  | 12.3  | 12.0  | 110.7  | 18.5    |
| Z                             | do.           | Disked            |       |       |       |       |       |       | 3.0   | 18.0  | 24.6  | 17.3  | 9.7   | 7.0   | 12.0  | 88.6   | 14.8    |
| Average                       |               |                   |       |       |       |       |       | 16.1  | 8.5   | 17.3  | 17.8  | 14.5  | 10.3  | 7.4   | 10.7  | 90.3   | 13.2    |
| C or D                        | Fallow        | Fallowed          |       |       |       |       |       | 12.1  | 9.5   | 19.1  | 25.2  | 18.9  | 7.9   | 12.1  | 21.3  | 126.1  | 15.8    |
| 35                            | do.           | do.               |       | 22.4  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 84                            | Winter rye    | Fall plowed       |       | 19.2  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 87                            | Cowpeas       | do.               |       | 19.0  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 88                            | do.           | do.               |       | 14.9  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 89                            | do.           | do.               |       | 17.9  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Average                       |               |                   |       | 18.7  |       |       |       |       |       |       |       |       |       |       |       |        |         |
| WINTER-RYE HAY                |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Rye           | Late fall plowed  |       |       |       |       |       | 2,100 | 900   | 2,200 | 900   | 1,150 | 1,400 | 550   | 1,550 | 8,650  | 1,236   |
| B                             | do.           | Early fall plowed |       |       |       |       |       | 2,300 | 1,300 | 3,850 | 2,750 | 2,250 | 1,300 | 1,750 | 3,750 | 16,950 | 2,421   |
| F                             | do.           | Fall listed       |       |       |       |       |       | 2,900 | 1,550 | 3,550 | 2,900 | 1,600 | 1,250 | 1,450 | 2,150 | 14,450 | 2,064   |
| X                             | do.           | Disked            |       |       |       |       |       |       | 1,150 | 3,200 | 682   | 2,050 | 2,150 | 1,000 | 1,600 | 10,682 | 1,780   |
| Y                             | do.           | Early fall plowed |       |       |       |       |       |       | 850   | 4,050 | 5,000 | 2,650 | 2,800 | 1,950 | 2,650 | 19,100 | 3,183   |
| Z                             | do.           | Disked            |       |       |       |       |       |       | 700   | 3,750 | 4,000 | 2,300 | 1,650 | 1,150 | 2,300 | 15,150 | 2,525   |
| Average                       |               |                   |       |       |       |       |       |       | 1,250 | 3,433 | 2,705 | 2,000 | 1,758 | 1,308 | 2,333 | 14,164 | 2,202   |
| C or D                        | Fallow        | Fallowed          |       |       |       |       |       | 2,150 | 1,750 | 3,450 | 4,150 | 2,900 | 1,150 | 2,250 | 4,500 | 20,150 | 2,879   |
| 35                            | do.           | do.               |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 84                            | Rye           | Fall plowed       | 1,280 | 6,750 | 3,250 |       |       |       |       |       |       |       |       |       |       | 10,000 | 5,000   |
| 87                            | Cowpeas       | Disked            |       | 5,150 | 2,900 |       |       |       |       |       |       |       |       |       |       | 8,050  | 4,025   |
| 88                            | do.           | do.               |       | 5,200 | 2,050 | 1,000 | 1,600 | 3,400 | 1,750 | 3,900 | 2,150 |       | 1,900 | 1,050 | 3,800 | 27,800 | 2,527   |
| 89                            | do.           | do.               |       | 4,950 | 1,600 | 700   | 1,500 | 3,500 | 1,150 | 4,900 | 2,100 |       | 2,900 | 650   | 4,100 | 28,050 | 2,550   |
| 89                            | do.           | do.               |       | 5,400 | 2,150 | 2,100 | 1,250 | 3,100 | 1,650 | 6,000 | 2,550 |       | 1,750 | 1,200 | 5,000 | 32,150 | 2,923   |
| 89                            | do.           | do.               |       | 5,400 | 2,100 | 1,150 | 1,000 | 2,850 | 1,400 | 5,900 | 3,000 |       | 2,750 | 800   | 5,600 | 31,950 | 2,905   |
| Check plots:                  |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1                             | Rye           | Fall plowed       |       |       |       | 3,100 |       | 4,250 | 2,350 | 6,150 | 3,350 |       | 2,550 | 2,250 | 3,850 | 24,750 | 3,536   |
| 2                             | do.           | do.               |       |       |       |       |       | 5,400 | 1,350 | 4,150 | 3,600 |       | 2,150 | 2,450 | 3,950 | 23,050 | 3,293   |
| 3                             | do.           | do.               |       |       |       | 3,700 |       | 4,950 | 1,750 | 4,100 | 3,650 |       | 3,400 | 1,800 |       | 19,650 | 3,275   |
| 4                             | do.           | do.               |       |       |       | 3,300 |       | 3,100 | 1,250 | 3,500 | 3,200 |       | 1,200 | 2,350 | 4,250 | 18,850 | 2,693   |
| 5                             | do.           | do.               |       |       |       | 2,450 |       | 2,950 | 1,450 | 3,050 | 3,050 |       | 2,300 | 1,100 | 3,100 | 17,000 | 2,429   |
| 6                             | do.           | do.               |       |       |       | 3,750 |       | 3,100 | 1,400 | 4,850 | 4,500 |       | 3,900 | 2,450 | 3,500 | 23,700 | 3,386   |
| 7                             | do.           | do.               |       |       |       | 3,350 |       | 3,400 | 1,950 | 4,500 | 4,050 |       | 1,850 | 2,100 | 3,950 | 21,800 | 3,114   |
| 8                             | do.           | do.               |       |       |       | 2,800 | 2,200 | 2,900 | 1,550 | 4,250 | 3,600 |       | 2,250 | 1,950 | 3,100 | 21,800 | 2,725   |
| 9                             | do.           | do.               |       |       |       | 3,000 | 1,600 | 3,150 | 2,100 | 4,650 | 3,650 |       | 1,650 | 1,900 | 3,250 | 21,950 | 2,744   |
| 10                            | do.           | do.               |       |       |       | 3,050 |       | 3,100 | 2,150 | 4,250 | 3,450 |       | 2,275 | 1,650 | 3,400 | 20,275 | 2,896   |
| 11                            | do.           | do.               |       |       |       | 3,650 |       | 3,350 | 2,900 | 4,850 | 4,650 |       | 3,400 | 3,050 | 4,700 | 26,850 | 3,836   |
| 12                            | do.           | do.               |       |       |       |       |       | 2,400 | 1,900 | 4,400 | 4,100 |       | 1,900 | 2,300 | 3,450 | 20,450 | 2,921   |
| 13                            | do.           | do.               |       |       |       | 2,900 |       | 2,050 | 1,400 | 3,350 | 2,700 |       | 1,850 | 2,300 | 2,950 | 16,600 | 2,371   |
| 14                            | do.           | do.               |       |       |       | 2,950 |       |       |       |       |       |       |       |       |       |        |         |
| 15                            | do.           | do.               |       |       |       | 2,600 |       |       |       |       |       |       |       |       |       |        |         |
| Average                       |               |                   |       | 5,475 | 2,342 | 1,238 | 1,525 | 3,347 | 1,732 | 4,515 | 3,374 |       | 2,351 | 1,844 | 3,872 | 21,828 | 3,113   |

<sup>1</sup> No record kept.



## CROP YIELDS AT THE WOODWARD (OKLA.) FIELD STATION—Continued

TABLE 68.—Annual acre yields of specified crops grown in rotations on individual plots at Woodward, Okla., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage methods | 1914  | 1915  | 1916  | 1917  | 1918  | 1919   | 1920   | 1921  | 1922  | 1923  | 1924  | 1925   | 1926   | Total   | Average |
|-------------------------------|---------------|-----------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|--------|--------|---------|---------|
| <b>SWEETCLOVER</b>            |               |                 |       |       |       |       |       |        |        |       |       |       |       |        |        |         |         |
| 35                            | Winter rye    | Fallowed        |       |       |       |       | 2,400 |        |        |       |       |       |       |        |        | 2,400   | 2,400   |
|                               | Fallow        | do              |       |       |       |       | 1,950 |        |        |       |       |       |       |        |        | 1,950   | 1,950   |
| 36                            | do            | do              | 0     | 0     | 0     | 0     | 2,150 |        |        |       |       |       |       |        |        | 2,150   | 538     |
|                               | Sweetclover   | do              | 0     | 0     | 4,750 | 250   | 2,050 |        |        |       |       |       |       |        |        | 7,050   | 1,763   |
| Average                       |               |                 |       | 0     | 2,375 | 125   | 2,138 |        |        |       |       |       |       |        |        | 3,388   | 1,663   |
| <b>SORGO TOTAL</b>            |               |                 |       |       |       |       |       |        |        |       |       |       |       |        |        |         |         |
| A                             | Sorgo         | Spring plowed   | 7,950 | 6,722 | 4,280 | 4,110 | 3,500 | 6,500  | 10,000 | 6,880 | 5,610 | 5,000 | 8,950 | 7,280  | 10,810 | 79,642  | 6,637   |
| B                             | do            | Fall plowed     | 5,230 | 7,889 | 5,200 | 4,000 | 5,100 | 7,750  | 10,630 | 7,940 | 6,190 | 5,563 | 8,450 | 11,330 | 12,690 | 92,732  | 7,728   |
| E                             | do            | Subsoiled       | 5,600 | 8,100 | 6,330 | 4,200 | 4,165 | 12,060 | 11,380 | 8,750 | 6,710 | 7,375 | 8,030 | 11,190 | 13,250 | 101,540 | 8,462   |
| F                             | do            | Spring listed   | 7,950 | 7,889 | 5,200 | 4,500 | 2,700 | 6,060  | 9,440  | 7,380 | 7,180 | 3,125 | 7,490 | 4,900  | 9,630  | 75,494  | 6,291   |
| G                             | do            | do              | 5,350 | 7,000 | 6,389 | 4,670 | 3,500 | 7,500  | 11,000 | 8,440 | 6,910 | 3,375 | 9,180 | 8,600  | 11,380 | 87,944  | 7,329   |
| Average                       |               |                 |       | 7,520 | 5,480 | 4,296 | 3,793 | 7,974  | 10,490 | 7,878 | 6,520 | 4,888 | 8,420 | 8,660  | 11,552 | 87,470  | 7,289   |
| C or D                        | Fallow        | Fallowed        | 5,980 | 9,111 | 5,610 | 6,444 | 3,220 | 8,250  | 13,500 | 7,130 | 7,050 | 9,938 | 7,960 | 12,990 | 14,750 | 105,953 | 8,829   |
| <b>SORGO GRAIN</b>            |               |                 |       |       |       |       |       |        |        |       |       |       |       |        |        |         |         |
| A                             | Sorgo         | Spring plowed   |       |       |       | 12.9  | 0     |        | 36.4   | 21.6  | .9    | 0     | 25.4  | 3.1    | 22.1   | 122.4   | 13.6    |
| B                             | do            | Fall plowed     |       |       |       | 12.7  | 0     |        | 31.5   | 31.1  | 1.6   | 0     | 25.7  | 8.0    | 25.9   | 136.5   | 15.2    |
| E                             | do            | Subsoiled       |       |       |       | 13.0  | 0     |        | 30.4   | 35.9  | 4.7   | 0     | 31.9  | 14.0   | 26.6   | 156.5   | 17.4    |
| F                             | do            | Spring listed   |       |       |       | 17.0  | 0     |        | 40.9   | 39.5  | 3.8   | 0     | 28.3  | 8.0    | 20.5   | 158.0   | 17.6    |
| G                             | do            | do              |       |       |       | 20.0  | 0     |        | 42.3   | 30.8  | 6.3   | 0     | 34.8  | 13.6   | 27.9   | 175.7   | 19.5    |
| Average                       |               |                 |       |       |       | 15.1  | 0     |        | 36.5   | 31.8  | 3.5   | 0     | 29.2  | 9.3    | 24.6   | 149.8   | 16.7    |
| C or D                        | Fallow        | Fallowed        |       |       |       | 18.7  | 0     |        | 43.3   | 38.2  | 2.7   | 0     | 27.5  | 16.8   | 29.7   | 176.9   | 19.7    |
| <b>MILO GRAIN<sup>2</sup></b> |               |                 |       |       |       |       |       |        |        |       |       |       |       |        |        |         |         |
| A                             | Milo          | Spring plowed   | 11.7  | 38.1  | 7.6   | 20.3  | 5.9   | 19.6   | 14.7   | 32.3  | 9.1   | 4.5   | 27.2  | 12.5   | 34.3   | 226.1   | 18.8    |
| Ba                            | do            | Fall plowed     | 11.4  | 42.8  | 7.8   | 22.6  | 7.8   | 25.9   | 11.2   | 33.4  | 11.0  | 3.4   | 31.0  | 21.6   | 44.4   | 262.9   | 21.9    |
| Bb                            | do            | do              |       |       |       |       | 6.9   | 13.8   | 23.7   | 27.6  | 8.0   | 6.9   | 26.5  | 12.3   | 35.1   | 153.9   | 19.2    |
| Bc                            | do            | do              |       |       |       |       |       | 16.5   | 7.1    | 30.2  | 5.6   | 0     | 23.7  | 11.0   | 23.3   | 117.4   | 14.7    |
| E                             | do            | Subsoiled       | 8.8   | 40.0  | 4.0   | 27.9  | 5.6   | 18.0   | 18.1   | 26.5  | 8.6   | 5.4   | 29.7  | 14.7   | 34.5   | 233.0   | 19.4    |
| F                             | do            | Spring listed   | 5.2   | 29.7  | 0     | 23.1  | 2.9   | 15.9   | 17.9   | 17.9  | 6.9   | 3.0   | 14.7  | 6.5    | 22.8   | 161.3   | 13.4    |
| G                             | do            | do              | 4.0   | 32.0  | 0     | 21.1  | 2.4   | 13.0   | 19.4   | 16.2  | 6.9   | 3.7   | 19.8  | 17.7   | 25.0   | 177.2   | 14.8    |
| T                             | do            | Fall plowed     |       |       |       |       | 4.0   | 15.6   | 17.5   | 34.3  | 6.0   | 0     | 19.4  | 8.4    | 16.6   | 117.8   | 14.7    |
| Average                       |               |                 |       | 36.5  | 3.9   | 23.0  | 4.9   | 17.3   | 16.2   | 27.3  | 7.8   | 3.4   | 24.0  | 13.1   | 29.5   | 181.2   | 17.1    |
| C or D                        | Fallow        | Fallowed        | 11.7  | 45.0  | 5.7   | 23.2  | 8.6   | 13.8   | 28.2   | 29.8  | 11.0  | 2.8   | 28.7  | 21.1   | 45.5   | 263.4   | 22.0    |
| H or I                        | do            | do              | 4.3   | 37.8  | 4.6   | 20.5  | 3.4   | 23.4   | 20.9   |       |       |       |       |        |        | 110.6   | 18.4    |
| J or K                        | do            | do              | 6.6   | 38.3  | 5.9   | 21.0  | 3.3   | 18.9   | 25.0   |       |       |       |       |        |        | 112.4   | 18.7    |
| L or M                        | do            | do              | 9.1   | 40.5  | 6.6   | 21.4  | 6.0   | 21.7   | 27.6   |       |       |       |       |        |        | 123.8   | 20.6    |
| N or O                        | do            | do              | 8.4   | 40.9  | 9.0   | 25.9  | 6.4   | 24.7   | 25.9   |       |       |       |       |        |        | 132.8   | 22.1    |
| P or Q                        | do            | do              | 12.1  | 39.7  | 9.2   | 29.9  | 7.9   | 25.9   | 25.0   |       |       |       |       |        |        | 137.6   | 22.9    |
| Average                       |               |                 |       | 40.4  | 6.8   | 23.7  | 5.9   | 21.4   | 25.4   | 29.8  | 11.0  | 2.8   | 28.7  | 21.1   | 45.5   | 146.8   | 20.8    |
| CM-1                          | Milo          | Disked          |       |       |       |       |       |        |        | 17.9  | 10.4  | 4.3   | 25.6  | 17.9   |        | 84.1    | 16.8    |
| CM-2                          | do            | do              |       |       |       |       |       |        |        | 18.5  | 8.6   | 5.4   | 23.1  | 18.1   |        | 79.8    | 16.0    |
| CM-3                          | do            | Spring listed   |       |       |       |       |       |        |        | 18.5  | 12.1  | 4.5   | 22.2  | 15.7   |        | 75.8    | 15.2    |
| CM-4                          | do            | do              |       |       |       |       |       |        |        | 21.3  | 14.2  | 8.3   | 22.8  | 18.5   |        | 20.9    | 16.9    |
| CM-5                          | do            | do              |       |       |       |       |       |        |        | 19.0  | 13.8  | 6.5   | 23.1  | 13.4   |        | 81.4    | 16.3    |
| 35                            | Sweetclover   | Spring plowed   | 13.6  | 27.8  | 15.7  | 18.5  |       |        |        |       |       |       |       |        |        | 62.0    | 20.7    |
| 36                            | do            | do              | 9.8   | 24.1  | 14.0  | 17.7  |       |        |        |       |       |       |       |        |        | 55.8    | 18.6    |
| 151                           | Winter rye    | Green manured   | 9.9   | 30.4  | 13.8  | 26.3  |       |        |        |       |       |       |       |        |        | 70.5    | 23.5    |
| 152                           | do            | do              | 14.7  | 29.3  | 16.6  | 25.9  |       |        |        |       |       |       |       |        |        | 71.8    | 23.9    |
| 153                           | Corn          | Spring plowed   | 7.3   | 30.2  | 8.8   | 19.8  |       |        |        |       |       |       |       |        |        | 58.8    | 19.6    |
| 154                           | Cowpeas       | Green manured   | 16.4  | 26.3  | 15.9  | 36.4  |       |        |        |       |       |       |       |        |        | 78.6    | 26.2    |
| 155                           | Fallow        | Fallowed        | 9.5   | 24.6  | 15.7  | 19.0  |       |        |        |       |       |       |       |        |        | 59.3    | 19.8    |
| 156                           | do            | do              | 14.4  | 38.4  | 19.2  | 35.8  |       |        |        |       |       |       |       |        |        | 93.4    | 31.1    |
| 161                           | Cowpeas       | Fall plowed     |       |       |       |       | 5.0   | 37.1   | 17.5   | 40.1  | 11.4  | 12.9  | 35.6  | 39.0   | 55.6   | 249.2   | 31.2    |
| 162                           | do            | Spring plowed   |       |       |       |       | 7.9   | 36.1   | 28.0   | 33.4  | 14.0  | 7.8   | 23.7  | 27.6   | 41.8   | 212.4   | 26.6    |
| 163                           | Kafir         | Fall plowed     |       |       |       |       | 7.9   | 36.2   | 20.2   | 49.3  | 15.9  | 10.8  | 40.5  | 32.8   | 56.5   | 262.2   | 32.8    |
| 165                           | Fallow        | Fallowed        |       |       |       |       | 11.4  | 28.1   | 35.1   | 39.7  | 9.1   | 10.3  | 30.6  | 31.5   | 51.1   | 235.5   | 29.4    |
| 166                           | Winter wheat  | Fall plowed     |       |       |       |       | 8.8   | 35.7   | 21.8   | 48.3  | 21.8  | 17.0  | 42.0  | 35.4   | 53.2   | 275.2   | 34.4    |
| 168                           | Kafir         | Spring plowed   |       |       |       |       | 7.3   | 33.7   | 7.5    | 34.3  | 16.6  | 5.4   | 36.6  | 26.9   | 50.4   | 211.4   | 26.4    |
| 169                           | do            | do              |       |       |       |       | 7.6   | 28.2   | 26.9   | 45.0  | 23.7  | 13.4  | 36.4  | 22.2   | 56.9   | 252.7   | 31.6    |
| 201                           | Cowpeas       | Fall plowed     | 7.9   | 35.1  | 5.2   | 21.8  | 4.6   | 10.7   | 17.2   | 31.5  | 4.7   | 0     | 25.2  | 14.7   |        | 170.7   | 15.5    |
| 202                           | do            | Spring plowed   | 10.0  | 43.3  | 6.7   | 20.5  | 8.0   | 15.7   | 19.4   |       |       |       |       |        |        | 113.6   | 18.9    |
| 203                           | Cotton        | do              | 13.8  | 45.3  | 10.3  | 14.5  | 3.8   | 17.1   | 27.2   |       |       |       |       |        |        | 118.2   | 19.7    |
| 263                           | Winter wheat  | Fall plowed     |       |       |       |       |       | 23.5   | 13.8   | 32.8  | 7.3   | 0     | 29.7  | 21.8   | 34.9   | 163.8   | 20.5    |
| 294                           | Kafir         | Spring plowed   |       |       |       |       |       | 22.4   | 20.9   | 33.8  | 11.4  | 0     | 28.0  | 22.0   | 46.8   | 183.3   | 23.2    |
| 297                           | Fallow        | Fallowed        |       |       |       |       |       | 18.2   | 31.5   | 29.1  | 9.1   | 0     | 25.6  | 10.8   | 36.9   | 161.2   | 20.2    |
| 298                           | do            | do              |       |       |       |       |       | 14.4   | 26.3   | 30.0  | 8.6   | 0     | 21.3  | 6.5    | 32.3   | 139.4   | 17.4    |
| Average                       |               |                 |       | 32.3  | 12.9  | 23.3  | 5.5   | 25.5   | 22.4   | 37.3  | 12.5  | 6.3   | 28.9  | 22.0   | 39.6   | 137.3   | 22.7    |
| <b>KAFIR TOTAL</b>            |               |                 |       |       |       |       |       |        |        |       |       |       |       |        |        |         |         |
| A                             | Kafir         | Spring plowed   | 5,150 | 8,280 | 3,110 | 6,560 | 2,610 | 2,500  | 7,310  | 4,690 | 4,130 | 3,190 | 3,690 | 4,630  | 8,310  | 59,010  | 4,918   |
| Ba                            | do            | Fall plowed     | 3,020 | 8,890 | 3,300 | 7,330 | 2,300 | 3,630  | 7,310  | 5,440 | 4,880 | 3,350 | 3,630 | 4,560  | 8,560  | 63,210  | 5,268   |
| Bb                            | do            | do              |       |       |       |       | 2,780 | 5,440  | 7,310  | 6,380 | 3,880 | 4,063 | 5,130 | 6,300  | 10,630 | 48,633  | 6,079   |
| E                             | do            | Subsoiled       | 2,680 | 7,700 | 2,890 | 7,100 | 2,280 | 3,940  | 6,190  | 4,310 | 4,060 | 2,190 | 3,630 | 4,440  | 7,880  | 56,610  | 4,718   |
| F                             | do            | Spring listed   | 3,930 | 7,100 | 2,800 | 6,500 | 1,500 | 3,060  | 4,560  | 4,310 | 2,560 | 1,440 | 2,880 | 3,130  | 3,310  | 43,150  | 3,596   |
| G                             | do            | do              | 2,960 | 6,390 | 3,300 | 6,280 | 1,500 | 3,880  | 5,130  | 4,560 | 2,940 | 1,880 | 3,880 | 4,440  | 3,350  | 47,430  | 3,953   |
| T                             | do            | Fall plowed     |       |       |       |       | 2,150 | 3,380  | 9,500  | 5,000 | 4,630 | 3,880 | 4,250 | 5,750  | 11,810 | 48,200  | 6,025   |
| Average                       |               |                 |       | 7,672 | 3,080 | 6,754 | 2,038 | 3,690  | 6,759  | 4,956 | 3,797 | 2,860 | 3,870 | 4,750  | 7,679  | 52,320  | 4,937   |
| C or D                        | Fallow        | Fallowed        | 3,150 | 8,110 | 3,680 | 9,060 | 2,440 | 3,810  | 7,310  | 4,630 | 4,880 | 3,630 | 3,880 | 4,810  | 10,190 | 66,430  | 5,536   |
| H or I                        | do            | do              | 2,450 | 7,220 | 2,700 | 8,220 | 2,440 | 3,880  | 7,690  | 4,250 | 4,060 | 4,250 | 3,940 | 6,940  | 7,250  | 62,950  | 5,246   |
| J or K                        | do            | do              | 2,760 | 7,750 | 3,300 | 7,850 | 2,350 | 4,060  | 8,060  | 3,750 | 3,880 | 4,560 | 3,250 | 6,190  | 6,750  | 61,750  | 5,146   |
| L or M                        | do            | do              | 3,500 | 7,800 | 3,350 | 8,250 | 1,800 | 4,560  | 8,000  | 4,190 | 3,310 | 4,380 | 3,190 | 6,190  | 6,060  | 61,080  | 5,090   |

<sup>2</sup> Yields of 16 check plots running single year, 1914 omitted.



## CROP YIELDS AT THE WOODWARD (OKLA.) FIELD STATION—Continued

TABLE 68.—Annual acre yields of specified crops grown in rotations on individual plots at Woodward, Okla., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage methods | 1914  | 1915  | 1916  | 1917  | 1918  | 1919   | 1920   | 1921  | 1922  | 1923  | 1924  | 1925  | 1926   | Total  | Average |
|-------------------------------|---------------|-----------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|--------|--------|---------|
| KAFIR TOTAL—continued         |               |                 |       |       |       |       |       |        |        |       |       |       |       |       |        |        |         |
| N or O                        | Fallow        | Fallowed        | 3,980 | 9,330 | 2,850 | 9,250 | 2,350 | 5,130  | 7,750  | 4,940 | 4,060 | 5,060 | 4,060 | 7,130 | 6,690  | 68,600 | 5,717   |
| P or Q                        | do            | do              | 4,360 | 7,830 | 4,220 | 8,500 | 2,610 | 4,880  | 9,060  | 4,310 | 3,880 | 4,750 | 4,000 | 6,750 | 7,750  | 68,540 | 5,712   |
| Average                       |               |                 |       | 8,007 | 3,350 | 8,522 | 2,350 | 4,387  | 7,978  | 4,335 | 4,012 | 4,438 | 3,720 | 6,335 | 7,445  | 64,892 | 5,408   |
| 151                           | Winter rye    | Green manured   |       |       |       |       | 3,440 | 5,190  | 5,500  | 9,250 | 5,250 | 5,060 | 4,630 | 7,130 | 10,500 | 52,510 | 6,564   |
| 152                           | do            | do              |       |       |       |       | 4,060 | 6,250  | 6,630  | 8,880 | 4,810 | 5,250 | 3,790 | 6,060 | 10,560 | 52,230 | 6,529   |
| 153                           | Corn          | Fall plowed     |       |       |       |       | 2,600 | 4,250  | 8,380  | 7,750 | 2,560 | 3,560 | 3,560 | 4,190 | 7,440  | 41,690 | 5,211   |
| 154                           | Cowpeas       | Green manured   |       |       |       |       | 3,000 | 5,000  | 10,630 | 8,880 | 4,250 | 3,630 | 4,250 | 6,000 | 11,380 | 54,020 | 6,753   |
| 155                           | Fallow        | Fallowed        |       |       |       |       | 1,500 | 2,630  | 5,560  | 6,440 | 2,940 | 2,680 | 2,940 | 4,880 | 5,810  | 33,880 | 4,235   |
| 156                           | do            | do              |       |       |       |       | 4,060 | 6,310  | 11,500 | 9,500 | 4,880 | 4,940 | 5,810 | 8,310 | 12,940 | 64,190 | 8,024   |
| 160                           | (Kafir        | Spring plowed   |       |       |       |       | 2,900 | 3,380  | 7,810  | 2,810 | 2,880 | 3,060 | 3,940 | 4,940 | 7,000  | 35,820 | 4,478   |
|                               | Cowpeas       | do              |       |       |       |       | 3,050 | 5,310  | 8,750  | 6,810 | 3,130 | 3,380 | 4,190 | 5,380 | 6,940  | 43,890 | 5,486   |
| 161                           | Milo          | Fall plowed     |       |       |       |       | 3,200 | 3,880  | 7,380  | 4,310 | 4,000 | 4,380 | 4,440 | 4,940 | 8,810  | 42,140 | 5,268   |
| 162                           | do            | Spring plowed   |       |       |       |       | 2,750 | 3,250  | 7,750  | 3,880 | 3,190 | 3,380 | 4,000 | 4,940 | 6,560  | 36,950 | 4,619   |
| 163                           | Cowpeas       | Fall plowed     |       |       |       |       | 3,280 | 5,440  | 9,000  | 8,310 | 4,190 | 4,500 | 4,940 | 7,440 | 9,750  | 53,570 | 6,696   |
| 165                           | Milo          | Spring plowed   |       |       |       |       | 3,500 | 3,630  | 7,880  | 5,440 | 2,750 | 3,810 | 3,380 | 5,000 | 8,190  | 40,080 | 5,010   |
| 167                           | Winter wheat  | Fall plowed     |       |       |       |       | 3,440 | 5,750  | 9,380  | 9,060 | 4,690 | 5,130 | 4,750 | 7,630 | 12,940 | 59,330 | 7,416   |
| 168                           | Fallow        | Fallowed        |       |       |       |       | 3,300 | 6,060  | 10,130 | 7,440 | 3,060 | 4,250 | 5,000 | 6,130 | 10,380 | 52,450 | 6,556   |
| 169                           | Cowpeas       | Spring plowed   |       |       |       |       | 2,560 | 6,750  | 8,880  | 7,440 | 3,880 | 3,810 | 4,190 | 6,880 | 9,690  | 51,520 | 6,440   |
| 264                           | Winter wheat  | Fall plowed     |       |       |       |       | 2,050 | 5,380  | 7,190  | 7,880 | 2,190 | 3,310 | 4,130 | 5,440 | 10,630 | 46,150 | 5,769   |
| 282                           | Corn          | Spring plowed   |       |       |       |       | 1,150 | 8,310  | 7,750  | 7,060 | 3,440 | 1,690 | 4,630 | 4,190 | 8,250  | 45,320 | 5,665   |
| 283                           | Peanuts       | do              |       |       |       |       | 3,100 | 4,690  | 8,250  | 8,000 | 3,250 | 3,500 | 4,810 | 5,750 | 9,690  | 47,940 | 5,993   |
| 284                           | Cowpeas       | do              |       |       |       |       | 4,500 | 10,560 | 5,880  | 3,380 | 2,880 | 4,190 | 5,250 | 9,250 | 41,390 | 5,913  |         |
| 285a                          | do            | do              |       |       |       |       | 3,050 | 5,500  | 7,940  | 8,880 | 3,310 | 3,500 | 4,630 | 5,500 | 9,630  | 48,890 | 6,111   |
| 285b                          | do            | do              |       |       |       |       | 5,750 | 8,380  | 4,380  | 2,750 | 2,750 | 3,560 | 4,130 | 7,560 | 33,510 | 4,787  |         |
| 286                           | do            | Green manured   |       |       |       |       | 4,940 | 9,500  | 5,060  | 2,750 | 3,440 | 3,380 | 4,940 | 7,500 | 36,570 | 5,224  |         |
| 288                           | Fallow        | Fallowed        |       |       |       |       | 4,000 | 9,940  | 5,310  | 3,440 | 2,565 | 3,440 | 4,690 | 9,310 | 38,695 | 5,528  |         |
| 289                           | do            | do              |       |       |       |       | 4,500 | 9,880  | 6,250  | 3,440 | 3,125 | 5,060 | 5,060 | 8,750 | 40,005 | 5,715  |         |
| 290                           | Pinto beans   | Spring plowed   |       |       |       |       | 3,610 | 4,560  | 7,690  | 7,190 | 3,560 | 3,500 | 5,000 | 4,060 | 10,310 | 45,870 | 5,734   |
| 294                           | Milo          | do              |       |       |       |       | 2,670 | 3,250  | 8,060  | 6,190 | 2,690 | 2,380 | 4,440 | 4,380 | 8,440  | 39,830 | 4,979   |
| 402                           | (Kafir        | Fall plowed     | 2,900 | 8,560 | 4,500 | 6,060 | 2,220 | 3,250  | 5,940  | 5,310 | 3,380 | 2,750 | 4,130 | 4,500 | 7,060  | 57,660 | 4,805   |
|                               | Winter wheat  | do              | 2,590 | 9,380 | 4,280 | 5,170 | 1,900 | 5,250  | 6,880  | 6,750 | 3,500 | 2,940 | 3,560 | 4,630 | 6,940  | 61,160 | 5,098   |
| Average                       |               |                 |       | 8,970 | 4,390 | 5,615 | 2,060 | 4,925  | 8,326  | 6,798 | 3,484 | 3,541 | 4,186 | 5,442 | 9,008  | 46,331 | 5,736   |
| KAFIR GRAIN                   |               |                 |       |       |       |       |       |        |        |       |       |       |       |       |        |        |         |
| A                             | Kafir         | Spring plowed   | 14.3  | 40.2  | 5.2   | 19.3  | 6.7   | 18.7   | 34.0   | 24.6  | 9.4   | 14.0  | 27.1  | 11.7  | 42.3   | 253.9  | 21.1    |
| Ba                            | do            | Fall plowed     | 8.7   | 40.3  | 6.8   | 22.2  | 7.9   | 19.9   | 36.0   | 29.8  | 8.5   | 15.2  | 27.3  | 27.3  | 42.7   | 283.9  | 23.7    |
| Bb                            | do            | do              |       |       |       |       | 8.0   | 23.7   | 16.3   | 29.8  | 10.8  | 15.6  | 33.1  | 27.5  | 42.9   | 199.7  | 25.0    |
| E                             | do            | Subsoiled       | 7.4   | 38.3  | 4.8   | 25.2  | 6.2   | 17.3   | 32.1   | 24.6  | 7.3   | 9.8   | 26.5  | 19.2  | 44.0   | 255.3  | 21.3    |
| F                             | do            | Spring listed   | 6.2   | 32.2  | 3.7   | 22.0  | 4.2   | 16.2   | 24.0   | 22.9  | 7.1   | 3.1   | 22.1  | 13.8  | 17.1   | 188.4  | 15.7    |
| G                             | do            | do              | 8.0   | 28.3  | 5.5   | 22.0  | 2.9   | 15.9   | 27.3   | 23.5  | 8.8   | 8.1   | 25.8  | 22.1  | 19.2   | 209.4  | 17.5    |
| T                             | do            | Fall plowed     |       |       |       |       | 2.3   | 15.7   | 37.3   | 28.3  | 12.5  | 14.4  | 27.1  | 26.3  | 43.1   | 204.7  | 25.6    |
| Average                       |               |                 |       | 35.9  | 5.2   | 22.1  | 5.6   | 78.2   | 29.6   | 26.2  | 9.2   | 11.5  | 27.0  | 21.1  | 35.9   | 227.8  | 21.4    |
| C or D                        | Fallow        | Fallowed        | 8.0   | 37.8  | 8.7   | 31.1  | 7.3   | 20.8   | 33.5   | 27.9  | 9.2   | 12.5  | 25.6  | 22.3  | 49.8   | 286.5  | 23.9    |
| H or I                        | do            | do              | 5.8   | 36.7  | 3.3   | 29.1  | 5.5   | 20.5   | 31.3   | 26.2  | 8.1   | 16.2  | 26.7  | 31.3  | 36.5   | 271.4  | 22.6    |
| J or K                        | do            | do              | 8.2   | 38.3  | 4.2   | 26.3  | 5.7   | 18.8   | 32.7   | 22.5  | 8.3   | 17.5  | 19.6  | 29.6  | 31.7   | 255.7  | 21.3    |
| L or M                        | do            | do              | 6.2   | 36.5  | 4.2   | 29.3  | 2.8   | 17.2   | 32.5   | 23.8  | 6.7   | 18.3  | 19.4  | 32.9  | 29.8   | 253.4  | 21.1    |
| N or O                        | do            | do              | 8.8   | 46.1  | 5.0   | 34.3  | 5.7   | 19.9   | 36.7   | 29.8  | 8.3   | 20.4  | 26.9  | 32.1  | 35.8   | 301.0  | 25.1    |
| P or Q                        | do            | do              | 10.2  | 38.0  | 5.5   | 29.2  | 5.7   | 19.6   | 36.3   | 27.3  | 8.3   | 18.5  | 22.5  | 32.5  | 38.1   | 281.5  | 23.5    |
| Average                       |               |                 |       | 39.0  | 5.2   | 29.9  | 5.5   | 19.5   | 33.8   | 26.3  | 8.2   | 17.2  | 23.5  | 30.1  | 37.0   | 274.9  | 22.9    |
| 151                           | Winter rye    | Green manured   |       |       |       |       | 5.9   | 24.6   | 23.8   | 37.1  | 10.2  | 13.7  | 29.8  | 29.4  | 48.5   | 217.1  | 27.1    |
| 152                           | do            | do              |       |       |       |       | 10.9  | 28.7   | 34.4   | 40.2  | 13.3  | 22.3  | 32.2  | 31.0  | 46.7   | 248.8  | 31.1    |
| 153                           | Corn          | Fall plowed     |       |       |       |       | 4.4   | 16.7   | 34.4   | 35.4  | 8.5   | 12.5  | 26.2  | 21.9  | 36.5   | 192.4  | 24.0    |
| 154                           | Cowpeas       | Green manured   |       |       |       |       | 5.3   | 19.7   | 44.4   | 42.1  | 12.1  | 11.2  | 23.7  | 24.8  | 52.5   | 230.5  | 28.8    |
| 155                           | Fallow        | Fallowed        |       |       |       |       | 2.5   | 17.3   | 28.1   | 29.8  | 6.7   | 9.2   | 15.6  | 18.8  | 29.4   | 154.9  | 19.4    |
| 156                           | do            | do              |       |       |       |       | 8.9   | 23.0   | 47.3   | 42.1  | 14.0  | 13.1  | 37.5  | 34.2  | 58.3   | 272.5  | 34.1    |
| 160                           | (Kafir        | Spring plowed   |       |       |       |       | 8.3   | 18.2   | 34.0   | 15.6  | 8.3   | 15.6  | 26.2  | 23.1  | 37.1   | 178.1  | 22.3    |
|                               | Cowpeas       | do              |       |       |       |       | 8.3   | 27.2   | 32.9   | 32.3  | 8.1   | 13.7  | 29.4  | 35.2  | 37.1   | 215.9  | 27.0    |
| 161                           | Milo          | Fall plowed     |       |       |       |       | 7.8   | 18.1   | 32.9   | 22.9  | 10.8  | 21.8  | 31.2  | 22.7  | 43.5   | 206.9  | 25.5    |
| 162                           | do            | Spring plowed   |       |       |       |       | 6.7   | 15.4   | 35.2   | 19.0  | 8.3   | 13.3  | 26.9  | 20.0  | 34.6   | 172.7  | 21.6    |
| 163                           | Cowpeas       | Fall plowed     |       |       |       |       | 9.4   | 28.8   | 35.8   | 39.6  | 14.4  | 20.0  | 34.2  | 35.8  | 53.5   | 262.0  | 32.8    |
| 165                           | Milo          | Spring plowed   |       |       |       |       | 11.7  | 19.7   | 21.9   | 25.0  | 7.9   | 11.9  | 21.2  | 21.7  | 39.8   | 169.1  | 21.1    |
| 167                           | Winter wheat  | Fall plowed     |       |       |       |       | 9.9   | 29.3   | 38.1   | 41.7  | 14.8  | 21.2  | 30.8  | 36.3  | 60.4   | 272.6  | 34.1    |
| 168                           | Fallow        | Fallowed        |       |       |       |       | 10.0  | 28.1   | 41.5   | 34.4  | 10.2  | 17.3  | 32.3  | 24.2  | 53.8   | 241.8  | 30.2    |
| 169                           | Cowpeas       | Spring plowed   |       |       |       |       | 7.1   | 33.1   | 39.4   | 37.5  | 14.4  | 18.7  | 30.0  | 27.9  | 54.6   | 255.6  | 32.0    |
| 264                           | Winter wheat  | Fall plowed     |       |       |       |       | 5.3   | 22.9   | 27.5   | 38.8  | 9.6   | 11.4  | 29.4  | 22.9  | 42.9   | 205.4  | 25.7    |
| 282                           | Corn          | Spring plowed   |       |       |       |       | 1.9   | 21.4   | 27.7   | 33.5  | 10.6  | 11.0  | 28.5  | 20.0  | 46.0   | 198.7  | 24.8    |
| 283                           | Peanuts       | do              |       |       |       |       | 10.8  | 23.9   | 25.4   | 40.6  | 11.0  | 13.7  | 29.6  | 20.4  | 49.8   | 214.4  | 26.8    |
| 284                           | Cowpeas       | do              |       |       |       |       |       | 15.2   | 35.0   | 28.3  | 9.0   | 9.2   | 28.3  | 19.2  | 38.3   | 167.3  | 23.9    |
| 285a                          | do            | do              |       |       |       |       |       | 15.9   | 28.1   | 42.1  | 12.1  | 9.4   | 28.7  | 20.4  | 47.1   | 203.8  | 25.5    |
| 285b                          | do            | do              |       |       |       |       |       | 25.0   | 36.7   | 24.3  | 7.3   | 11.2  | 25.0  | 14.8  | 37.9   | 157.2  | 22.5    |
| 286                           | do            | Green manured   |       |       |       |       |       | 19.8   | 41.0   | 32.2  | 4.6   | 13.0  |       |       |        |        |         |

## CROP YIELDS AT THE WOODWARD (OKLA.) FIELD STATION—Continued

TABLE 68.—Annual acre yields of specified crops grown in rotations on individual plots at Woodward, Okla., in one or more years from 1914 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage methods | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>COWPEA HAY—continued</b>   |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 163.....                      | Milo          | Fall plowed     |       |       |       |       | 1,050 | 3,440 | 2,100 | 3,900 | 2,150 | 1,300 | 2,650 | 1,750 | 2,050 | 19,340 | 2,418   |
| 164.....                      | Winter wheat  | Spring plowed   |       |       |       |       | 1,550 | 2,687 | 2,200 | 3,600 | 2,600 | 1,250 | 5,875 | 550   | 2,250 | 21,012 | 2,627   |
| 166.....                      | Milo          | do              |       |       |       |       | 1,150 | 2,625 | 1,750 | 4,350 | 2,500 | 1,400 | 4,065 | 1,650 | 2,200 | 20,530 | 2,566   |
| 167.....                      | Kafir         | do              |       |       |       |       | 1,150 | 3,062 | 2,200 | 4,550 | 1,900 | 1,250 | 4,100 | 1,650 | 2,050 | 20,762 | 2,595   |
| 169.....                      | Milo          | do              |       |       |       |       | 1,050 | 3,000 | 1,900 | 4,200 | 1,600 | 1,250 | 3,250 | 1,400 | 2,050 | 18,650 | 2,331   |
| 201.....                      | Cotton        | Fall plowed     | 1,830 | 3,130 | 1,390 | 2,650 | 1,400 | 3,000 | 1,600 | 3,050 | 1,100 | 1,250 | 2,950 | 1,500 | (?)   | 23,020 | 2,093   |
| 202.....                      | do            | Spring plowed   | 1,770 | 3,580 | 1,370 | 2,400 | 1,600 | 3,150 | 2,050 |       |       |       |       |       |       | 14,150 | 2,358   |
| 203.....                      | Milo          | do              | 2,030 | 3,870 | 1,510 | 2,350 | 1,200 | 3,800 | 2,250 |       |       |       |       |       |       | 14,980 | 2,497   |
| 265.....                      | Winter wheat  | Fall plowed     |       |       |       |       | 1,000 | 4,060 | 1,900 | 3,750 | 1,350 | 800   | 3,300 | 2,150 | 2,650 | 19,960 | 2,495   |
| 284.....                      | Kafir         | Spring plowed   |       |       |       |       | 850   | 2,350 | 1,750 | 3,250 | 1,000 | 1,000 | 2,900 | 1,350 | 1,650 | 15,250 | 1,906   |
| 285a.....                     | do            | do              |       |       |       |       | 750   | 3,100 | 1,950 | 3,250 | 800   | 1,250 | 3,300 | 1,450 | 2,000 | 17,100 | 2,138   |
| 285b.....                     | do            | do              |       |       |       |       | 1,000 | 4,062 | 1,600 | 3,150 | 1,250 | 1,000 | 2,250 | 1,300 | 1,150 | 5,762  | 1,970   |
| Average.....                  |               |                 |       | 3,438 | 1,450 | 1,936 | 1,050 | 3,184 | 1,939 | 3,594 | 1,544 | 1,171 | 3,237 | 1,356 | 1,865 | 19,447 | 2,245   |
| <b>SUDAN GRASS</b>            |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 84.....                       | Winter rye    | Spring plowed   | 3,760 | 4,150 | 4,000 | 1,650 | 3,000 | 2,000 | 6,600 | 5,450 | 2,450 | 2,150 | 4,850 | 3,533 | 5,553 | 45,366 | 3,781   |
| 87.....                       | do            | do              | 2,740 | 5,600 | 3,650 | 2,150 | 2,200 | 2,150 | 6,950 | 6,400 | 2,250 | 1,750 | 4,950 | 4,350 | 6,300 | 48,700 | 4,058   |
| Average.....                  |               |                 |       | 4,875 | 3,825 | 1,900 | 2,600 | 2,075 | 6,775 | 5,925 | 2,350 | 1,950 | 4,900 | 3,942 | 5,917 | 47,033 | 3,920   |
| <b>BROOMCORN (BRUSH)</b>      |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Broomcorn     | Spring plowed   | 240   | 833   | 211   | 378   | 289   | 306   | 513   | 606   | 313   | 213   | 450   | 163   | 825   | 5,100  | 425     |
| B.....                        | do            | Fall plowed     | 240   | 778   | 250   | 356   | 220   | 325   | 463   | 581   | 325   | 163   | 681   | 263   | 750   | 5,155  | 430     |
| E.....                        | do            | Subsoiled       | 350   | 830   | 300   | 430   | 367   | 420   | 613   | 681   | 363   | 238   | 825   | 513   | 938   | 6,518  | 543     |
| F.....                        | do            | Spring listed   | 340   | 860   | 320   | 400   | 370   | 439   | 650   | 625   | 238   | 300   | 300   | 0     | 638   | 5,140  | 428     |
| G.....                        | do            | do              | 330   | 822   | 311   | 389   | 350   | 439   | 650   | 744   | 375   | 313   | 638   | 600   | 938   | 6,599  | 550     |
| Average.....                  |               |                 |       | 825   | 278   | 391   | 325   | 386   | 578   | 647   | 323   | 245   | 579   | 308   | 818   | 5,702  | 475     |
| <b>C or D</b>                 |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| C or D.....                   | Fallow        | Fallowed        | 280   | 822   | 244   | 325   | 344   | 322   | 638   | 612   | 356   | 113   | 700   | 413   | 825   | 5,714  | 476     |
| H or I.....                   | do            | do              | 320   | 611   | 380   | 356   | 450   | 300   | 775   |       |       |       |       |       |       | 2,872  | 479     |
| J or K.....                   | do            | do              | 320   | 590   | 410   | 260   | 370   | 235   | 688   |       |       |       |       |       |       | 2,553  | 426     |
| L or M.....                   | do            | do              | 310   | 580   | 440   | 210   | 500   | 265   | 813   |       |       |       |       |       |       | 2,808  | 468     |
| N or O.....                   | do            | do              | 340   | 560   | 530   | 260   | 550   | 150   | 817   |       |       |       |       |       |       | 2,867  | 478     |
| P or Q.....                   | do            | do              | 330   | 578   | 477   | 289   | 500   | 257   | 725   |       |       |       |       |       |       | 2,826  | 471     |
| Average.....                  |               |                 |       | 624   | 414   | 283   | 452   | 255   | 743   | 612   | 356   | 113   | 700   | 413   | 825   | 3,273  | 436     |
| <b>PEANUT TOTAL</b>           |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 283.....                      | Kafir         | Spring plowed   |       |       |       |       |       |       | 4,110 | 2,640 | 3,100 | 640   | 4,850 | 1,550 | 2,490 | 19,380 | 2,769   |
| <b>PEANUTS</b>                |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 283.....                      | Kafir         | Spring plowed   |       |       |       |       |       | 693   | 1,710 | 1,040 | 400   | 0     | 650   | 200   | 1,040 | 5,733  | 717     |
| <b>COTTON</b>                 |               |                 |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 201.....                      | Milo          | Fall plowed     | 525   | 400   | 0     | 0     | 0     | 285   | 0     | 190   | 240   | 0     | 422   | 50    | (?)   | 158.7  | 14.4    |
| 202.....                      | do            | Spring plowed   | 615   | 470   | 0     | 0     | 0     | 354   | 0     |       |       |       |       |       |       | 82.4   | 13.7    |
| 203.....                      | Cowpeas       | do              | 675   | 600   | 0     | 0     | 0     | 316   | 0     |       |       |       |       |       |       | 91.6   | 15.3    |
| Average.....                  |               |                 |       | 735   | 0     | 0     | 0     | 478   | 0     | 190   | 240   | 0     | 422   | 50    |       | 166.4  | 21.7    |

\* Discontinued.



TABLE 69.—*Annual acre yields of specified crops grown in rotations on individual plots at Dalhart, Tex., in one or more years from 1908 to 1926*

[illegible]





|   |       |             |   |      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|-------|-------------|---|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Wheat | Full plowed | 0 | 10.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
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[illegible]





TABLE 70.—*Annual acre yields of specified crops grown in rotations on individual plots at Tucumcari, N. Mex., in one or more years from 1912 to 1926*

| Crop and rotation No. or plot | Previous crop | Tillage method    | 1912  | 1913  | 1914  | 1915  | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|---------------|-------------------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| WINTER WHEAT                  |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Winter wheat  | Late fall plowed  |       |       | 0     | 7.0   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 14.8 | 21.8  | 1.8     |
| B                             | do            | Early fall plowed |       |       | 0     | 6.4   | 1.8  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 24.7 | 32.9  | 2.7     |
| Average                       |               |                   |       |       |       | 6.7   | .9   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 19.8 | 27.4  | 2.3     |
| C or D                        | Fallow        | Fallowed          |       |       | 0     | 5.3   | 4.0  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 30.3 | 39.6  | 3.3     |
| 164                           | Cowpeas       | Disked            |       |       |       |       |      |      | 0    | 0    |      |      |      |      |      |      |      |       |         |
| 211                           | Winter wheat  | Fall plowed       |       |       |       |       |      |      | 0    | 0    |      |      |      |      |      |      |      |       |         |
| 212                           | Pinto beans   | Disked            |       |       | 0     | 0     | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |       |         |
|                               | Millet        | Fall plowed       |       |       | 0     | 0     | 0    | 0    | 0    | 0    |      |      |      |      |      |      |      |       |         |
| SPRING WHEAT                  |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Wheat         | Spring plowed     | 7.6   | 0     | 13.5  | 5.6   | 0    | 0    |      |      |      |      |      |      |      |      |      | 19.1  | 4.8     |
| B                             | do            | Fall plowed       | 7.6   | 0     | 14.4  | 5.2   | .9   | 0    |      |      |      |      |      |      |      |      |      | 20.5  | 5.1     |
| Average                       |               |                   |       |       | 14.0  | 5.4   | .5   | 0    |      |      |      |      |      |      |      |      |      | 19.8  | 5.0     |
| C or D                        | Fallow        | Fallowed          | 7.6   | 0     | 14.7  | 6.2   | 1.3  | 0    |      |      |      |      |      |      |      |      |      | 22.2  | 5.6     |
| 1                             | Corn          | Disked            | 6.3   | 0     | 14.9  | 5.0   | .4   | 0    |      |      |      |      |      |      |      |      |      | 20.3  | 5.1     |
| 2                             | do            | Spring plowed     | 6.4   | 0     | 19.8  | 9.7   | 0    | 0    |      |      |      |      |      |      |      |      |      | 29.5  | 7.4     |
| 3                             | do            | Fall plowed       | 6.3   | 0     | 14.5  | 8.3   | 0    | 0    |      |      |      |      |      |      |      |      |      | 22.8  | 5.7     |
| 4                             | Oats          | do                | 6.3   | 0     | 13.7  | 7.3   | .1   | 0    |      |      |      |      |      |      |      |      |      | 21.1  | 5.3     |
| 5                             | Fallow        | Fallowed          | 6.2   | 0     | 21.4  | 7.7   | 0    | 0    |      |      |      |      |      |      |      |      |      | 29.1  | 7.3     |
| 8                             | Oats          | Fall plowed       | 6.3   | 0     | 18.6  | 6.9   | 0    | 0    |      |      |      |      |      |      |      |      |      | 25.5  | 6.4     |
| 9                             | do            | Spring plowed     | 6.3   | 0     | 18.0  | 7.0   | 0    | 0    |      |      |      |      |      |      |      |      |      | 25.0  | 6.3     |
| Average                       |               |                   |       |       | 17.3  | 7.4   | .07  | 0    |      |      |      |      |      |      |      |      |      | 24.8  | 6.2     |
| OATS                          |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 1                             | Wheat         | Fall plowed       | 5.0   | 0     | 30.5  | 7.3   | 1.6  | 0    |      |      |      |      |      |      |      |      |      | 39.4  | 9.9     |
| 2                             | do            | Spring plowed     | 5.6   | 0     | 32.0  | 8.2   | 0    | 0    |      |      |      |      |      |      |      |      |      | 40.2  | 10.1    |
| 3                             | do            | Fall plowed       | 5.3   | 0     | 15.2  | 6.1   | 1.8  | 0    |      |      |      |      |      |      |      |      |      | 23.1  | 5.8     |
| 4                             | Corn          | Disked            | 5.0   | 0     | 29.2  | 6.6   | 0    | 0    |      |      |      |      |      |      |      |      |      | 35.8  | 9.0     |
| 5                             | Wheat         | Fall plowed       | 5.0   | 0     | 36.4  | 4.2   | 1.8  | 0    |      |      |      |      |      |      |      |      |      | 42.4  | 10.6    |
| 6                             | Barley        | do                | 8.1   | 0     | 29.6  | 6.1   | 1.8  | 0    |      |      |      |      |      |      |      |      |      | 37.5  | 9.4     |
| 7                             | Corn          | Spring plowed     | 7.5   | 0     | 34.2  | 8.0   | .2   | 0    |      |      |      |      |      |      |      |      |      | 42.4  | 10.6    |
| 8                             | Fallow        | Fallowed          | 8.2   | 0     | 41.3  | 5.4   | 4.6  | 0    |      |      |      |      |      |      |      |      |      | 51.3  | 12.8    |
| 9                             | Corn          | Spring plowed     | 7.8   | 0     | 34.6  | 7.0   | .2   | 0    |      |      |      |      |      |      |      |      |      | 41.8  | 10.5    |
| Average                       |               |                   |       |       | 31.4  | 6.5   | 1.3  | 0    |      |      |      |      |      |      |      |      |      | 39.3  | 8.9     |
| CORN TOTAL                    |               |                   |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Corn          | Spring plowed     | 4,060 | 1,740 | 5,680 | 3,730 |      |      |      |      |      |      |      |      |      |      |      |       |         |



## CROP YIELDS AT THE TUCUMCARI (N. MEX.) FIELD STATION—Continued

TABLE 70.—Annual acre yields of specified crops grown in rotations on individual plots at Tucumcari, N. Mex., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920 | 1921  | 1922  | 1923  | 1924   | 1925  | 1926   | Total  | Average |     |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|--------|-------|--------|--------|---------|-----|
| WINTER RYE                    |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| A                             | Winter rye    | Late plowed    |       |       |       |       |       |       |       |       |      | 0     | 8.9   | 0     | 0      | 2.1   | 0      | 8.2    | 19.2    | 2.7 |
| B                             | do            | Early plowed   |       |       |       |       |       |       |       |       |      | 0     | 10.7  | 0     | 0      | 2.9   | 0      | 12.7   | 26.3    | 3.8 |
| Average                       |               |                |       |       |       |       |       |       |       |       |      | 9.8   | 0     | 0     | 2.5    | 0     | 10.5   | 22.8   | 3.3     |     |
| C or D                        | Fallow        | Fallowed       |       |       |       |       |       |       |       |       | 0    | 6.4   | 0     | 0     | 2.9    | 0     | 18.6   | 27.9   | 4.0     |     |
| 84                            | Cowpeas       | Fall plowed    |       |       |       | 0     | 3.5   | 0     | 0     | 0     |      |       |       |       |        |       |        | 3.5    | .9      |     |
| ALFALFA                       |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| 480-A                         | Alfalfa       | 44-inch rows   | 0     | 0     | 0     | 3,140 | 1,280 |       | 0     | 0     |      |       |       |       |        |       |        | 4,420  | 884     |     |
| 480-B                         | do            | 36-inch rows   | 0     | 0     | 0     | 3,100 | 1,660 |       | 0     | 0     |      |       |       |       |        |       |        | 4,760  | 952     |     |
| 480-C                         | do            | 24-inch rows   | 0     | 0     | 0     | 0     | 2,220 |       | 0     | 0     |      |       |       |       |        |       |        | 2,220  | 440     |     |
| 480-D                         | do            | 8-inch rows    |       | 0     | 0     | 0     | 1,760 |       | 0     | 0     |      |       |       |       |        |       |        | 1,760  | 352     |     |
| Average                       |               |                |       |       |       | 1,560 | 1,730 | 0     | 0     |       |      |       |       |       |        |       |        | 3,290  | 657     |     |
| MILLET HAY                    |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| 211                           | Winter wheat  | Spring plowed  | 3,780 | 1,240 | 3,720 | 1,860 | 560   | 0     | 320   | 1,900 |      |       |       |       |        |       |        | 8,360  | 1,393   |     |
| 212                           | Pinto beans   | do             | 3,860 | 800   | 3,980 | 2,080 | 580   | 0     | 150   | 2,100 |      |       |       |       |        |       |        | 8,890  | 1,482   |     |
| 217                           | Sorgo         | do             | 0     | 1,080 | 3,620 | 3,040 | 840   | 3,160 | 1,150 | 4,500 |      |       |       |       |        |       |        | 16,310 | 2,718   |     |
| 483                           | Milo          | Spring listed  |       |       |       |       |       |       |       |       |      | 2,070 | 760   | 1,260 | 0      | 700   |        | 4,790  | 958     |     |
| Average                       |               |                |       |       | 3,773 | 2,327 | 660   | 1,053 | 540   | 2,833 |      | 2,070 | 760   | 1,260 | 0      | 700   |        | 9,588  | 1,638   |     |
| SORGO TOTAL                   |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| A                             | Sorgo         | Spring plowed  | 5,140 | 1,640 | 4,900 | 4,920 | 4,240 | 4,330 | 800   | 4,200 |      | 5,830 | 5,590 | 5,470 | 9,390  | 3,590 | 10,050 | 63,310 | 5,276   |     |
| B                             | do            | Fall plowed    | 6,100 | 1,760 | 5,320 | 5,020 | 5,560 | 4,360 | 860   | 4,800 |      | 6,070 | 4,860 | 6,000 | 11,550 | 3,460 | 10,750 | 68,610 | 5,718   |     |
| E                             | do            | Subsoiled      | 5,180 | 1,640 | 5,080 | 4,980 | 4,600 | 3,600 | 550   | 7,300 |      |       |       |       |        |       |        | 26,110 | 4,352   |     |
| F                             | do            | Spring listed  | 5,440 | 1,540 | 4,660 | 4,040 | 3,300 | 4,560 | 0     | 2,600 |      | 5,350 | 3,410 | 4,420 | 9,300  | 3,480 | 7,890  | 53,010 | 4,418   |     |
| G                             | do            | do             | 5,040 | 1,280 | 5,090 | 5,040 | 3,340 | 4,890 | 300   | 4,600 |      | 5,330 | 4,630 | 6,810 | 10,440 | 3,830 | 8,310  | 60,610 | 5,051   |     |
| Average                       |               |                |       |       | 5,010 | 4,800 | 4,208 | 4,348 | 502   | 4,700 |      | 5,645 | 4,622 | 4,140 | 10,170 | 3,590 | 9,250  | 54,330 | 4,528   |     |
| C or D                        | Fallow        | Fallowed       | 5,620 | 1,460 | 5,480 | 6,680 | 5,960 | 5,110 | 1,500 | 5,600 |      | 6,890 | 6,310 | 6,440 | 14,100 | 5,900 | 15,600 | 85,570 | 7,131   |     |
| 217                           | Cowpeas       | Spring plowed  | 5,230 | 1,700 | 5,120 | 7,200 | 6,740 | 6,500 | 1,200 | 4,900 |      |       |       |       |        |       |        | 31,660 | 5,277   |     |
| MILO GRAIN                    |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| A                             | Milo          | Spring plowed  | 41.4  | 8.1   | 38.2  | 41.7  | 5.3   | 8.9   | 0     | 17.8  | 26.0 | 42.6  | 1.3   | 17.6  | 20.9   | 11.7  | 28.3   | 260.3  | 20.0    |     |
| B                             | do            | Fall plowed    | 39.7  | 4.5   | 45.8  | 46.8  | 9.0   | 10.9  | 0     | 24.0  | 31.2 | 48.1  | 2.1   | 10.0  | 26.9   | 10.5  | 30.0   | 295.3  | 22.7    |     |
| E                             | do            | Subsoiled      | 41.7  | 4.7   | 36.2  | 41.1  | 7.2   | 8.9   | 0     | 19.5  | 36.4 | 45.3  | 14.5  | 18.3  | 36.6   | 13.6  | 31.6   | 309.2  | 23.8    |     |
| F                             | do            | Spring listed  | 33.1  | 3.4   | 30.2  | 24.3  | 6.9   | 10.6  | 0     | 10.7  | 32.6 | 40.3  | 7.6   | 10.7  | 19.1   | 13.8  | 18.8   | 225.6  | 17.4    |     |
| G                             | do            | do             | 19.3  | 1.7   | 39.9  | 33.6  | 4.5   | 7.4   | 0     | 26.4  | 37.1 | 37.8  | 8.8   | 12.6  | 23.8   | 8.3   | 20.3   | 260.5  | 20.0    |     |
| Average                       |               |                |       |       | 38.1  | 37.5  | 6.6   | 9.3   | 0     | 19.7  | 32.7 | 42.8  | 6.9   | 13.8  | 25.5   | 11.6  | 25.8   | 270.2  | 10.8    |     |
| C or D                        | Fallow        | Fallowed       | 39.5  | 6.0   | 54.6  | 52.2  | 18.4  | 14.4  | 0     | 15.9  | 32.8 | 49.8  | 11.6  | 23.3  | 27.1   | 22.6  | 31.7   | 354.4  | 27.3    |     |
| H or I                        | do            | do             | 47.6  | 3.8   | 63.0  | 67.7  | 11.0  | 45.5  | 0     | 30.3  | 31.4 | 37.8  | 11.2  | 20.9  | 27.6   | 22.6  | 26.2   | 395.2  | 30.4    |     |
| J or K                        | do            | do             | 39.0  | 2.8   | 62.4  | 60.0  | 15.3  | 40.9  | 0     | 30.9  | 30.9 | 38.1  | 13.1  | 22.2  | 26.0   | 20.5  | 24.0   | 384.3  | 29.6    |     |
| L or M                        | do            | do             | 31.4  | 2.8   | 61.9  | 53.6  | 23.1  | 14.1  | 0     | 25.2  | 29.1 | 47.8  | 15.2  | 20.7  | 22.6   | 20.0  | 19.1   | 352.4  | 27.1    |     |
| N or O                        | do            | do             | 26.4  | 2.2   | 62.7  | 41.8  | 31.1  | 18.0  | 0     | 42.2  | 30.5 | 36.4  | 19.0  | 17.9  | 21.4   | 19.8  | 20.3   | 361.1  | 27.8    |     |
| Average                       |               |                |       |       | 60.9  | 55.1  | 19.8  | 26.6  | 0     | 28.9  | 30.9 | 42.0  | 14.0  | 21.0  | 24.9   | 21.1  | 24.3   | 369.5  | 28.4    |     |
| 158                           | Corn          | Spring plowed  |       |       |       |       |       |       |       |       |      | 42.9  | 7.9   | 17.6  | 26.4   | 15.3  | 31.4   | 141.5  | 23.6    |     |
| 159                           | (Milo         | do             |       |       |       |       |       |       |       |       |      | 47.2  | 5.2   | 17.4  | 31.0   | 19.5  | 31.0   | 151.3  | 25.2    |     |
|                               | Cowpeas       | do             |       |       |       |       |       |       |       |       |      | 49.1  | 14.0  | 20.3  | 28.6   | 20.7  | 40.9   | 173.6  | 28.9    |     |
| 161                           | do            | Fall plowed    |       |       |       |       |       |       | 0     | 31.0  |      |       |       |       |        |       |        |        |         |     |
| 162                           | do            | Spring plowed  |       |       |       |       |       |       | 0     | 38.4  |      | 42.8  | 11.1  | 18.4  | 24.5   | 17.1  | 26.7   | 179.0  | 25.6    |     |
| 163                           | Kafir         | Fall plowed    |       |       |       |       |       |       | 0     | 35.0  |      |       |       |       |        |       |        |        |         |     |
| 165                           | Fallow        | Fallowed       |       |       |       |       |       |       | 0     | 37.1  |      | 38.4  | 19.0  | 25.9  | 28.6   | 29.0  | 36.7   | 214.7  | 30.7    |     |
| 166                           | Winter wheat  | Spring plowed  |       |       |       |       |       |       | 0     | 51.0  |      |       |       |       |        |       |        |        |         |     |
| 168                           | Kafir         | do             |       |       |       |       |       |       | 0     | 29.3  |      | 35.9  | 10.1  | 21.1  | 20.3   | 19.0  | 24.0   | 159.7  | 22.8    |     |
| 169                           | do            | do             |       |       |       |       |       |       | 0     | 32.4  |      | 16.0  | 12.4  | 15.0  | 20.2   | 17.1  | 23.5   | 136.6  | 19.5    |     |
| 201                           | Cowpeas       | Fall plowed    | 50.0  | 7.1   | 53.2  | 65.5  | 20.5  | 22.9  | 0     | 23.7  |      |       |       |       |        |       |        | 185.8  | 31.0    |     |
| 202                           | do            | Spring plowed  | 44.3  | 5.9   | 38.8  | 59.1  | 16.4  | 36.9  | 0     | 24.7  |      |       |       |       |        |       |        | 175.9  | 29.3    |     |
| 203                           | Cotton        | do             | 44.0  | 4.7   | 44.3  | 50.0  | 14.0  | 37.9  | 0     | 29.7  |      |       |       |       |        |       |        | 175.9  | 29.3    |     |
| 222                           | Cowpeas       | do             | 36.9  | 12.9  | 48.4  | 51.8  | 15.0  | 19.7  | 0     | 32.8  |      |       |       |       |        |       |        | 167.7  | 28.0    |     |
| 223                           | Fallow        | Fallowed       | 24.1  | 5.9   | 54.5  | 44.6  | 38.1  | 27.6  | 0     | 21.6  |      |       |       |       |        |       |        | 186.4  | 31.1    |     |
| 272                           | Cowpeas       | Spring plowed  | 32.8  | 10.3  | 33.6  | 45.5  | 15.8  | 15.0  | 0     | 31.7  |      |       |       |       |        |       |        | 141.6  | 23.6    |     |
| 273                           | Fallow        | Fallowed       | 46.4  | 6.6   | 62.1  | 60.6  | 6.9   | 28.1  | 0     | 30.9  |      |       |       |       |        |       |        | 188.6  | 31.4    |     |
| 292                           | Corn          | Spring plowed  |       |       |       |       |       |       |       |       |      | 38.4  | 7.6   | 26.4  | 22.2   | 21.2  | 30.7   | 146.5  | 24.4    |     |
| 293                           | Peanuts       | do             |       |       |       |       |       |       |       |       |      | 29.3  | 8.8   | 24.3  | 24.7   | 36.2  | 25.2   | 148.5  | 24.8    |     |
| 295                           | Cowpeas       | do             |       |       |       |       |       |       |       |       |      | 39.5  | 8.3   | 22.2  | 26.4   | 23.8  | 25.7   | 145.9  | 24.3    |     |
| 297                           | Fallow        | Fallowed       |       |       |       |       |       |       |       |       |      | 42.2  | 22.8  | 38.1  | 29.0   | 32.2  | 27.8   | 192.1  | 32.0    |     |
| 300                           | Pinto beans   | Spring plowed  |       |       |       |       |       |       |       |       |      | 45.9  | 13.2  | 26.0  | 27.8   | 29.5  | 28.1   | 170.5  | 28.4    |     |
| 481                           | Cotton        | Spring listed  |       |       |       |       |       |       |       |       |      | 42.1  | 3.7   | 28.8  | 22.5   | 28.3  | 29.0   | 154.4  | 25.7    |     |
| 482                           | Kafir         | do             |       |       |       |       |       |       |       |       |      | 32.8  | 5.7   | 21.4  | 17.2   | 20.9  | 25.2   | 84.7   | 21.2    |     |
| 483                           | Millet        | do             |       |       |       |       |       |       |       |       |      | 40.5  | 12.6  | 21.5  | 25.3   | 31.0  |        | 130.9  | 26.2    |     |
| 484                           | Sunflowers    | do             |       |       |       |       |       |       |       |       |      | 38.3  | 4.6   | 20.3  | 15.9   | 20.7  |        | 99.8   | 20.0    |     |
| 570                           | Fallow        | Fallowed       |       |       |       | 55.6  | 24.5  | 27.3  | 0     | 37.6  |      |       |       |       |        |       |        | 89.4   | 22.4    |     |
| Average                       |               |                |       |       | 47.8  | 53.9  | 18.9  | 26.9  | 0     | 30.8  |      | 39.2  | 10.8  | 22.8  | 24.4   | 23.8  | 29.0   | 155.9  | 26.2    |     |
| LM-R                          | Milo          | Listed         |       |       |       |       | 24.0  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-S                          | do            | do             |       |       |       |       | 18.6  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-T                          | do            | do             |       |       |       |       | 18.6  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-U                          | do            | do             |       |       |       |       | 19.1  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-V                          | do            | do             |       |       |       |       | 15.1  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-W                          | do            | do             |       |       |       |       | 9.9   |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-X                          | do            | do             |       |       |       |       | 15.6  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| LM-Y                          | do            | Fall plowed    |       |       |       |       | 14.1  |       |       |       |      |       |       |       |        |       |        |        |         |     |
| Check plots:                  |               |                |       |       |       |       |       |       |       |       |      |       |       |       |        |       |        |        |         |     |
| 1                             | Milo          | Listed         |       |       |       |       |       |       |       |       |      | 44.7  | 7.6   | 22.0  | 31.4   | 23.8  | 31.6   | 161.1  | 26.9    |     |
| 3                             | do            | do             |       |       |       |       |       |       |       |       |      | 40.5  | 4.6   | 19.9  | 26.0   | 22.6  | 33.1   | 146.7  | 24.5    |     |
| 4                             | do            | do             |       |       |       |       |       |       |       |       |      | 37.1  | 8.6   | 31.0  | 29.3   | 22.1  | 30.7   | 158.8  | 26.5    |     |
| 5                             | do            | do             |       |       |       |       |       |       |       |       |      | 37.6  | 10.2  | 20.5  | 24.8   | 21.9  | 27.9   | 142.9  | 23.8    |     |
| Average                       |               |                |       |       |       |       |       |       |       |       |      | 40.0  | 7.8   | 23.4  | 27.9   | 22.6  | 30.8   | 152.4  | 25.4    |     |



## CROP YIELDS AT THE TUCUMCARI (N. MEX.) FIELD STATION—Continued

TABLE 70.—Annual acre yields of specified crops grown in rotations on individual plots at Tucumcari, N. Mex., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919   | 1920  | 1921   | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|-------|-------|--------|---------|
| <b>MILO GRAIN—con.</b>        |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| C. M.—1 <sup>1</sup>          | Milo          | Spring listed  |       |       |       |       |       |       |       |        |       |        |       | 10.5  | 15.2  | 13.3  | 15.3  | 43.8   | 14.6    |
| C. M.—2 <sup>1</sup>          | do.           | Disked         |       |       |       |       |       |       |       |        |       |        |       | 9.8   | 19.0  | 12.6  | 15.3  | 46.9   | 15.6    |
| C. M.—3 <sup>1</sup>          | do.           | Spring listed  |       |       |       |       |       |       |       |        |       |        |       | 8.5   | 14.3  | 10.5  | 20.2  | 45.0   | 15.0    |
| C. M.—4 <sup>1</sup>          | do.           | do.            |       |       |       |       |       |       |       |        |       |        |       | 14.1  | 11.4  | 21.0  | 26.4  | 58.8   | 19.6    |
| C. M.—5 <sup>1</sup>          | do.           | do.            |       |       |       |       |       |       |       |        |       |        |       | 9.0   | 9.8   | 10.5  | 21.2  | 41.5   | 13.8    |
| Average                       |               |                |       |       |       |       |       |       |       |        |       |        |       |       | 13.9  | 13.6  | 19.7  | 47.2   | 15.7    |
| <b>Center field:</b>          |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| 295                           | Cowpeas       | Spring plowed  |       |       |       |       |       |       |       |        | 39.7  | 76.9   | 18.8  | 20.7  | 23.4  | 15.0  | 27.9  | 182.7  | 30.5    |
| 296                           | do.           | Green manured  |       |       |       |       |       |       |       |        | 49.1  | 50.2   | 12.4  | 15.7  | 30.0  | 15.9  | 28.3  | 152.5  | 25.4    |
| 298                           | Fallow        | Fallowed       |       |       |       |       |       |       |       |        | 40.7  | 73.4   | 12.3  | 22.6  | 25.2  | 23.6  | 21.2  | 178.3  | 29.7    |
| 299                           | Sudan grass   | Green manured  |       |       |       |       |       |       |       |        | 47.2  | 64.8   | 14.0  | 13.8  | 27.1  | 14.8  | 30.5  | 165.0  | 27.5    |
| 301                           | Cowpeas       | Spring plowed  |       |       |       |       |       |       |       |        | 41.9  | 69.5   | 10.0  | 15.7  | 29.8  | 13.3  | 30.5  | 168.8  | 28.1    |
| 302                           | Fallow        | Fallowed       |       |       |       |       |       |       |       |        | 62.4  | 69.8   | 22.6  | 20.0  | 31.4  | 22.6  | 32.9  | 199.3  | 33.2    |
| Average                       |               |                |       |       |       |       |       |       |       |        |       | 67.4   | 15.0  | 18.1  | 27.8  | 17.5  | 28.6  | 174.4  | 29.1    |
| <b>SUNFLOWERS</b>             |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| 484                           | Milo          | Spring listed  |       |       |       |       |       |       |       |        |       | 22,360 | 1,560 | 3,070 | 4,170 | 2,330 |       | 33,490 | 6,698   |
| <b>KAFIR TOTAL</b>            |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 7,880 | 2,800 | 7,040 | 6,200 | 2,220 | 4,310 | 1,600 | 3,050  | 2,910 | 2,900  | 1,730 | 2,250 | 4,200 | 3,650 | 3,660 | 45,720 | 3,517   |
| B                             | do.           | Fall plowed    | 7,490 | 2,600 | 5,440 | 6,620 | 3,800 | 5,670 | 1,400 | 3,930  | 3,460 | 4,600  | 1,600 | 2,500 | 4,650 | 3,630 | 3,750 | 51,050 | 3,927   |
| E                             | do.           | Subsoiled      | 8,340 | 2,100 | 6,610 | 6,000 | 3,940 | 3,270 | 800   | 3,280  | 3,620 | 3,800  | 1,540 | 2,500 | 5,000 | 3,420 | 3,910 | 47,690 | 3,668   |
| F                             | do.           | Spring listed  | 8,540 | 1,950 | 5,240 | 5,350 | 2,360 | 3,720 | 0     | 2,310  | 2,690 | 4,320  | 1,250 | 1,390 | 3,300 | 2,820 | 2,630 | 37,350 | 2,875   |
| G                             | do.           | do.            | 8,140 | 1,940 | 5,760 | 6,160 | 3,700 | 2,940 | 0     | 2,990  | 3,010 | 3,000  | 810   | 1,700 | 3,220 | 3,200 | 2,640 | 39,190 | 3,015   |
| Average                       |               |                |       |       | 6,018 | 6,066 | 3,204 | 3,982 | 760   | 3,112  | 3,138 | 3,724  | 1,386 | 2,068 | 4,086 | 3,344 | 3,318 | 44,206 | 3,400   |
| C or D                        | Fallow        | Fallowed       | 7,980 | 2,200 | 7,200 | 7,000 | 5,160 | 5,270 | 1,900 | 2,830  | 3,630 | 4,900  | 2,900 | 2,650 | 3,700 | 6,140 | 3,850 | 56,560 | 4,374   |
| H or I                        | do.           | do.            |       |       |       |       |       |       | 1,800 | 3,670  |       |        |       |       |       |       |       | 3,670  | 3,670   |
| J or K                        | do.           | do.            |       |       |       |       |       |       | 1,700 | 3,450  |       |        |       |       |       |       |       | 3,450  | 3,450   |
| L or M                        | do.           | do.            |       |       |       |       |       |       | 2,800 | 3,410  |       |        |       |       |       |       |       | 3,410  | 3,410   |
| N or O                        | do.           | do.            |       |       |       |       |       |       | 800   | 4,160  |       |        |       |       |       |       |       | 4,160  | 4,160   |
| Average                       |               |                |       |       | 7,200 | 7,000 | 5,160 | 5,270 | 1,900 | 3,504  | 3,630 | 4,900  | 2,900 | 2,650 | 3,700 | 6,140 | 3,580 | 71,550 | 3,813   |
| 82                            | Winter rye    | Green manured  |       |       |       | 5,700 | 1,040 | 6,030 | 200   | 4,540  |       |        |       |       |       |       |       | 11,810 | 2,953   |
| 83a                           | Sudan grass   | Spring listed  |       |       |       | 6,500 | 6,100 | 7,480 | 700   | 2,850  |       |        |       |       |       |       |       | 17,130 | 4,283   |
| 83b                           | do.           | do.            |       |       |       |       |       |       |       |        |       | 5,100  | 2,190 | 3,830 | 3,380 | 2,370 | 3,580 | 20,450 | 3,408   |
| 160                           | (Kafir)       | Spring plowed  |       |       |       |       |       |       |       |        |       | 4,000  | 2,170 | 2,720 | 2,440 | 2,340 | 3,430 | 17,100 | 2,850   |
| 161                           | (Cowpeas)     | do.            |       |       |       |       |       |       |       |        |       | 3,940  | 2,350 | 3,070 | 2,830 | 2,740 | 3,440 | 18,370 | 3,062   |
| 162                           | Milo          | Fall plowed    |       |       |       |       |       |       | 1,700 | 2,980  |       |        |       |       |       |       |       |        |         |
| 163                           | do.           | Spring plowed  |       |       |       |       |       |       | 2,000 | 3,660  |       |        |       |       |       |       |       |        |         |
| 165                           | Cowpeas       | Fall plowed    |       |       |       |       |       |       | 1,200 | 3,640  |       |        |       |       |       |       |       |        |         |
| 166                           | Milo          | Spring plowed  |       |       |       |       |       |       | 900   | 4,000  |       |        |       |       |       |       |       |        |         |
| 167                           | Winter wheat  | do.            |       |       |       |       |       |       | 600   | 4,740  |       |        |       |       |       |       |       |        |         |
| 168                           | Fallow        | Fallowed       |       |       |       |       |       |       | 1,400 | 3,900  |       |        |       |       |       |       |       |        |         |
| 169                           | Cowpeas       | Spring plowed  |       |       |       |       |       |       | 1,300 | 4,250  |       |        |       |       |       |       |       |        |         |
| 287                           | Fallow        | Fallowed       |       |       |       |       |       |       |       |        |       | 2,970  | 3,090 | 4,720 | 3,670 | 4,070 | 4,910 | 23,430 | 3,905   |
| Average                       |               |                |       |       |       |       | 3,570 | 6,755 | 450   | 11,600 |       | 4,525  | 2,299 | 3,575 | 3,305 | 3,033 | 4,045 | 21,100 | 3,513   |
| <b>Check plots:</b>           |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| 2                             | Kafir         | Listed         |       |       |       |       |       |       |       |        |       | 6,600  | 1,600 | 4,130 | 4,030 | 2,750 | 4,770 | 23,880 | 3,980   |
| 6                             | do.           | do.            |       |       |       |       |       |       |       |        |       | 5,440  | 2,880 | 3,070 | 3,770 | 2,780 | 3,650 | 21,590 | 3,598   |
| 7                             | do.           | do.            |       |       |       |       |       |       |       |        |       | 4,610  | 1,730 | 2,770 | 3,500 | 2,720 | 3,290 | 18,590 | 3,098   |
| 8                             | do.           | do.            |       |       |       |       |       |       |       |        |       | 2,200  | 1,690 | 3,780 | 5,000 | 3,010 | 3,390 | 19,070 | 3,178   |
| Average                       |               |                |       |       |       |       |       |       |       |        |       | 4,713  | 1,975 | 3,438 | 4,075 | 2,815 | 3,768 | 20,783 | 3,464   |
| 482                           | Milo          | Spring listed  |       |       |       |       |       |       |       |        |       | 4,340  | 1,530 | 3,270 | 2,930 | 3,630 | 4,050 | 13,880 | 3,470   |
| <b>KAFIR GRAIN</b>            |               |                |       |       |       |       |       |       |       |        |       |        |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 31.9  | 6.3   | 43.5  | 36.2  | 10.0  | 20.6  | 0     | 17.5   | 17.7  | 27.5   | 3.8   | 11.7  | 18.3  | 15.7  | 23.8  | 246.3  | 18.9    |
| B                             | do.           | Fall plowed    | 25.5  | 5.5   | 34.9  | 39.8  | 18.0  | 18.1  | 0     | 23.8   | 21.7  | 26.3   | 2.0   | 14.3  | 27.0  | 16.7  | 23.7  | 266.3  | 20.5    |
| E                             | do.           | Subsoiled      | 23.0  | 2.8   | 38.5  | 39.8  | 18.0  | 14.8  | 0     | 21.3   | 23.0  | 28.5   | 5.2   | 16.5  | 28.5  | 15.5  | 26.2  | 275.8  | 21.2    |
| F                             | do.           | Spring listed  | 20.3  | 2.3   | 32.8  | 35.0  | 13.0  | 13.4  | 0     | 15.2   | 16.7  | 20.8   | 1.3   | 8.7   | 15.0  | 10.2  | 14.8  | 197.9  | 15.2    |
| G                             | do.           | do.            | 34.8  | 2.2   | 38.3  | 42.0  | 16.1  | 14.0  | 0     | 23.2   | 19.5  | 18.8   | 1.5   | 9.5   | 15.5  | 15.7  | 17.2  | 231.3  | 17.8    |
| Average                       |               |                |       |       | 37.6  | 38.8  | 15.0  | 16.2  | 0     | 20.2   | 19.7  | 24.4   | 2.8   | 12.1  | 20.9  | 12.3  | 21.1  | 243.5  | 18.7    |
| C or D                        | Fallow        | Fallowed       | 26.0  | 5.2   | 49.3  | 45.8  | 22.1  | 24.7  | 0     | 20.5   | 22.7  | 27.7   | 10.2  | 13.0  | 19.3  | 31.0  | 22.7  | 309.0  | 23.8    |
| H or G                        | do.           | do.            |       |       |       |       |       |       | 0     | 21.2   |       |        |       |       |       |       |       | 21.2   | 21.2    |
| J or K                        | do.           | do.            |       |       |       |       |       |       | 0     | 19.2   |       |        |       |       |       |       |       | 19.2   | 19.2    |
| L or M                        | do.           | do.            |       |       |       |       |       |       | 0     | 18.5   |       |        |       |       |       |       |       | 18.5   | 18.5    |
| N or O                        | do.           | do.            |       |       |       |       |       |       | 0     | 24.3   |       |        |       |       |       |       |       | 24.3   | 24.3    |
| Average                       |               |                |       |       | 49.3  | 45.8  | 22.1  | 24.7  | 0     | 20.7   | 22.7  | 27.7   | 10.2  | 13.0  | 19.3  | 31.0  | 22.7  | 78.4   | 21.4    |
| 82                            | Winter rye    | Green manured  |       |       |       | 36.0  | 0     | 28.0  | 0     | 29.0   |       |        |       |       |       |       |       | 57.0   | 14.3    |
| 83a                           | Sudan grass   | Spring listed  |       |       |       | 40.6  | 0     | 34.7  | 0     | 19.2   |       |        |       |       |       |       |       | 53.9   | 13.5    |
| 83b                           | do.           | do.            |       |       |       |       |       |       |       |        |       | 26.3   | 2.4   | 14.6  | 20.3  | 11.0  | 23.0  | 97.6   | 16.3    |
| 160                           | (Kafir)       | Spring plowed  |       |       |       |       |       |       |       |        |       | 19.0   | 4.7   | 12.6  | 10.2  | 15.7  | 17.5  | 79.7   | 13.3    |
| 161                           | (Cowpeas)     | do.            |       |       |       |       |       |       |       |        |       | 20.7   | 6.3   | 15.1  | 14.5  | 17.5  | 17.5  | 91.6   | 15.3    |
| 162                           | Milo          | Fall plowed    |       |       |       |       |       |       | 0     | 22.9   |       |        |       |       |       |       |       |        |         |
| 163                           | do.           | Spring plowed  |       |       |       |       |       |       | 0     | 29.3   |       |        |       |       |       |       |       |        |         |
| 165                           | Cowpeas       | Fall plowed    |       |       |       |       |       |       | 0     | 27.3   |       |        |       |       |       |       |       |        |         |
| 166                           | Milo          | Spring plowed  |       |       |       |       |       |       | 0     | 26.7   |       |        |       |       |       |       |       |        |         |
| 167                           | Winter wheat  | do.            |       |       |       |       |       |       | 0     | 35.6   |       |        |       |       |       |       |       |        |         |
| 168                           | Fallow        | Fallowed       |       |       |       |       |       |       | 0     | 25.0   |       |        |       |       |       |       |       |        |         |
| 169                           | Cowpeas       | Spring plowed  |       |       |       |       |       |       | 0     | 29.1   |       |        |       |       |       |       |       |        |         |
| 287                           | Fallow        | Fallowed       |       |       |       |       |       |       | 0     |        |       | 12.0   | 11.0  | 19.9  | 17.5  | 31.8  | 25.3  | 117.5  | 19.6    |
| Average                       |               |                |       |       |       |       |       | 31.4  | 0     | 19.8   |       | 20.5   | 6.2   | 16.2  | 16.7  | 20.2  | 21.8  | 103.4  | 16.9    |

<sup>1</sup> Nos. 1 to 5 not comparable with milo in other fields. Methods: 1, Disked, shallow listed planted; 2, kept free from weeds with disk—surface planted; 3, early spring listed, cultivated—retaining ridges, planted in furrows with surface planter; 4, early spring listed, ridges harrowed down, planted by listing in same furrows; 5, early spring listed, planted by splitting ridges.



## CROP YIELDS AT THE TUCUMCARI (N. MEX.) FIELD STATION—Continued

TABLE 70.—Annual acre yields of specified crops grown in rotations on individual plots at Tucumcari, N. Mex., in one or more years from 1912 to 1926—Continued

| Crop and rotation No. or plot | Previous crop        | Tillage method | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|----------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>KAFIR GRAIN—con.</b>       |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Check plots:                  |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 2.....                        | Kafir                | Listed         |       |       |       |       |       |       |       |       |       | 31.8  | 3.2   | 18.5  | 17.5  | 19.0  | 28.0  | 118.0  | 19.7    |
| 6.....                        | do.                  | do.            |       |       |       |       |       |       |       |       |       | 23.5  | 6.9   | 13.3  | 14.0  | 17.5  | 20.3  | 95.5   | 15.9    |
| 7.....                        | do.                  | do.            |       |       |       |       |       |       |       |       |       | 23.2  | 4.2   | 14.2  | 14.0  | 19.0  | 21.3  | 95.9   | 16.0    |
| 8.....                        | do.                  | do.            |       |       |       |       |       |       |       |       |       | 10.0  | 3.2   | 13.1  | 17.0  | 22.3  | 21.7  | 87.3   | 14.6    |
| Average                       |                      |                |       |       |       |       |       |       |       |       |       | 22.1  | 4.4   | 14.8  | 15.6  | 19.5  | 22.8  | 99.2   | 16.6    |
| <b>COWPEA HAY</b>             |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        |                      | Spring plowed  |       |       |       | 2,360 | 4,000 | 2,660 | 650   | 900   |       |       |       |       |       |       |       | 8,210  | 2,053   |
| B.....                        | Cowpeas              | Fall plowed    |       |       |       | 2,180 | 3,760 | 1,760 | 400   | 1,660 |       |       |       |       |       |       |       | 7,580  | 1,855   |
| Average                       | do.                  |                |       |       |       |       | 3,880 | 2,210 | 525   | 1,280 |       |       |       |       |       |       |       | 7,895  | 1,974   |
| <b>C or D</b>                 |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow               | Fallowed       |       |       |       | 1,740 | 3,340 | 2,280 | 350   | 2,860 |       |       |       |       |       |       |       | 8,830  | 2,208   |
| 82.....                       | Kafir                | Spring plowed  |       |       |       | 2,980 | 1,220 | 2,900 | 490   | 900   |       |       |       |       |       |       |       | 5,510  | 1,378   |
| 83.....                       | do.                  | do.            |       |       |       | 2,620 | 1,400 | 2,360 | 670   | 1,800 |       | 2,350 | 1,040 | 3,720 | 1,690 | 1,250 | 1,530 | 17,810 | 1,781   |
| 84.....                       | Sudan grass          | do.            |       |       |       | 2,320 | 4,400 | 2,700 | 570   | 2,160 |       |       |       |       |       |       |       | 9,830  | 2,458   |
| 158.....                      | Milo                 | do.            |       |       |       |       |       |       |       |       |       | 2,460 | 1,380 | 3,110 | 1,850 | 1,030 | 1,070 | 10,900 | 1,817   |
| 159.....                      | do.                  | do.            |       |       |       |       |       |       |       |       |       | 2,530 | 1,290 | 3,330 | 2,170 | 1,380 | 1,450 | 12,150 | 2,025   |
| 160.....                      | Kafir                | do.            |       |       |       |       |       |       |       |       |       | 1,870 | 1,090 | 2,150 | 1,230 | 880   | 900   | 8,120  | 1,353   |
| 161.....                      | do.                  | Fall plowed    |       |       |       |       |       |       | 0     | 2,100 |       |       |       |       |       |       |       |        |         |
| 162.....                      | do.                  | Spring plowed  |       |       |       |       |       |       | 180   | 2,260 |       | 2,270 | 1,100 | 2,620 | 1,240 | 1,100 | 1,020 | 11,610 | 1,659   |
| 163.....                      | Milo                 | Fall plowed    |       |       |       |       |       |       | 0     | 2,600 |       |       |       |       |       |       |       |        |         |
| 164.....                      | Winter wheat         | Spring plowed  |       |       |       |       |       |       | 0     | 2,900 |       |       |       |       |       |       |       |        |         |
| 165.....                      | do.                  | do.            |       |       |       |       |       |       | 0     | 2,200 |       |       |       |       |       |       |       |        |         |
| 167.....                      | Kafir                | do.            |       |       |       |       |       |       | 0     | 2,000 |       |       |       |       |       |       |       |        |         |
| 169.....                      | Milo                 | do.            |       |       |       |       |       |       | 0     | 2,060 |       | 2,530 | 1,420 | 2,620 | 1,930 | 870   | 1,130 | 12,560 | 1,794   |
| 201.....                      | Cotton               | Fall plowed    | 3,860 | 2,140 | 3,940 | 3,200 | 4,380 | 2,820 | 330   | 1,600 |       |       |       |       |       |       |       | 16,270 | 2,712   |
| 202.....                      | do.                  | Spring plowed  | 3,820 | 2,060 | 3,900 | 3,120 | 1,620 | 2,260 | 450   | 1,500 |       |       |       |       |       |       |       | 13,850 | 2,308   |
| 203.....                      | Milo                 | do.            | 3,380 | 1,700 | 2,760 | 2,380 | 2,960 | 2,860 | 370   | 2,400 |       |       |       |       |       |       |       | 13,730 | 2,288   |
| 217.....                      | Millet               | do.            | 4,220 | 2,060 | 3,020 | 2,060 | 3,540 | 2,280 | 300   | 1,760 |       |       |       |       |       |       |       | 12,960 | 2,160   |
| 222.....                      | Cotton               | do.            | 3,060 | 2,480 | 3,140 | 2,560 | 4,160 | 2,620 | 0     | 2,460 |       |       |       |       |       |       |       | 14,940 | 2,490   |
| 223.....                      | Milo                 | do.            | 2,400 | 2,500 | 3,260 | 2,100 | 3,160 | 2,360 | 230   | 2,260 |       |       |       |       |       |       |       | 13,370 | 2,228   |
| 272.....                      | Cotton               | do.            | 3,500 | 2,320 | 3,260 | 2,780 | 3,940 | 2,040 | 220   | 3,200 |       |       |       |       |       |       |       | 15,440 | 2,573   |
| 273.....                      | Milo                 | do.            | 3,650 | 2,000 | 3,100 | 2,580 | 3,640 | 900   | 1,000 | 3,660 |       |       |       |       |       |       |       | 14,880 | 2,480   |
| 295.....                      | do.                  | do.            |       |       |       |       |       |       |       |       |       | 2,270 | 1,130 | 2,550 | 1,830 | 870   | 1,430 | 10,080 | 1,680   |
| Average                       |                      |                |       |       | 3,298 | 2,598 | 3,129 | 2,464 | 421   | 2,155 |       | 2,035 | 1,207 | 2,871 | 1,706 | 1,054 | 1,193 | 12,589 | 2,070   |
| <b>Center field:</b>          |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 295.....                      | Milo                 | Spring plowed  |       |       |       |       |       |       |       |       | 2,300 | 2,320 | 1,400 | 1,880 | 1,550 | 1,350 | 1,050 | 9,550  | 1,592   |
| 301.....                      | do.                  | do.            |       |       |       |       |       |       |       |       | (?)   | 2,440 | 1,760 | 1,610 | 2,150 | 1,700 | 1,050 | 10,710 | 1,785   |
| Average                       |                      |                |       |       |       |       |       |       |       |       |       | 2,380 | 1,580 | 1,745 | 1,850 | 1,525 | 1,050 | 10,130 | 1,689   |
| <b>SUDAN GRASS</b>            |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 83.....                       | Cowpeas <sup>2</sup> | Spring listed  |       |       |       |       |       |       |       |       |       | 2,450 | 1,900 | 4,420 | 4,020 | 3,980 | 4,350 | 21,120 | 3,520   |
| 84.....                       | Winter rye           | Spring plowed  |       |       |       | 7,020 | 2,360 | 2,980 | 2,450 | 9,750 |       |       |       |       |       |       |       | 17,640 | 4,385   |
| Average                       |                      |                |       |       |       |       | 2,360 | 2,980 | 2,450 | 9,750 |       | 2,450 | 1,900 | 4,420 | 4,020 | 3,980 | 4,350 | 19,330 | 3,953   |
| <b>BROOMCORN (BRUSH)</b>      |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Broomcorn            | Spring plowed  |       | 580   | 205   | 725   | 585   | 345   | 400   | 300   | 640   |       |       |       |       |       |       | 2,995  | 499     |
| B.....                        | do.                  | Fall plowed    |       | 570   | 195   | 580   | 415   | 420   | 410   | 80    | 580   |       |       |       |       |       |       | 2,485  | 414     |
| E.....                        | do.                  | Subsoiled      |       | 520   | 200   | 490   | 680   | 190   | 110   | 0     | 520   |       |       |       |       |       |       | 1,990  | 332     |
| F.....                        | do.                  | Spring listed  |       | 460   | 205   | 685   | 460   | 270   | 340   | 0     | 320   |       |       |       |       |       |       | 2,075  | 346     |
| G.....                        | do.                  | do.            |       | 420   | 150   | 760   | 530   | 290   | 300   | 0     | 380   |       |       |       |       |       |       | 2,260  | 377     |
| Average                       |                      |                |       |       |       | 648   | 534   | 303   | 312   | 76    | 488   |       |       |       |       |       |       | 2,361  | 394     |
| <b>C or D</b>                 |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow               | Fallowed       |       | 590   | 215   | 745   | 370   | 330   | 465   | 200   | 510   |       |       |       |       |       |       | 2,620  | 437     |
| <b>PEANUT HAY</b>             |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 293.....                      | Milo                 | Spring plowed  |       |       |       |       |       |       |       |       |       | 2,050 | 1,880 | 4,440 | 0     | 3,650 | 1,750 | 13,770 | 2,295   |
| <b>PEANUTS</b>                |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 293.....                      | do.                  | do.            |       |       |       |       |       |       |       |       |       | 960   | 400   | 1,335 | 0     | 520   | 735   | 3,950  | 658     |
| <b>PINTO BEANS</b>            |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 211.....                      | Millet               | Spring plowed  | 16.3  | .2    | 15.0  | 9.9   | 6.7   | 1.7   | 2.3   | 9.3   |       |       |       |       |       |       |       | 44.9   | 7.5     |
| 212.....                      | Winter wheat         | do.            | 12.3  | .2    | 17.6  | 11.2  | 5.2   | 4.1   | 0     | 11.8  |       |       |       |       |       |       |       | 49.9   | 8.3     |
| 300.....                      | Milo                 | do.            |       |       |       |       |       |       |       |       |       | 12.3  | 1.1   | 10.5  | 4.5   | 2.2   | 4.7   | 35.3   | 5.9     |
| Average                       |                      |                |       |       | 16.3  | 10.6  | 6.0   | 2.9   | 1.2   | 10.6  |       | 12.3  | .6    | 5.3   | 2.3   | 1.1   | 2.4   | 65.1   | 7.2     |
| <b>SEED COTTON</b>            |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A.....                        | Cotton               | Spring plowed  |       | 380   | 60    | 1,175 | 685   | 475   | 10    |       |       |       |       |       |       |       |       | 2,345  | 586     |
| B.....                        | do.                  | Fall plowed    |       | 420   | 95    | 840   | 520   | 380   | 65    |       |       |       |       |       |       |       |       | 1,805  | 451     |
| E.....                        | do.                  | Subsoiled      |       | 310   | 105   | 775   | 340   | 205   | 0     |       |       |       |       |       |       |       |       | 1,320  | 330     |
| F.....                        | do.                  | Fall listed    |       | 350   | 80    | 660   | 175   | 295   | 10    |       |       |       |       |       |       |       |       | 1,140  | 285     |
| G.....                        | do.                  | Spring listed  |       | 340   | 160   | 915   | 150   | 205   | 70    |       |       |       |       |       |       |       |       | 1,340  | 335     |
| W.....                        | do.                  | Fall plowed    |       | 630   | 280   | 940   | 125   | 145   | 10    |       |       |       |       |       |       |       |       | 1,220  | 305     |
| Average                       |                      |                |       |       |       | 884   | 333   | 284   | 28    |       |       |       |       |       |       |       |       | 1,528  | 382     |
| <b>C or D</b>                 |                      |                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow               | Fallowed       |       | 550   | 95    | 770   | 525   | 450   | 20    |       |       |       |       |       |       |       |       | 1,765  | 441     |
| 201.....                      | Milo                 | Fall plowed    |       | 325   | 240   | 820   | 575   | 475   | 90    | 0     | 70    |       |       |       |       |       |       | 2,030  | 338     |
| 202.....                      | do.                  | Spring plowed  |       | 200   | 280   | 790   | 380   | 390   | 130   | 0     | 95    |       |       |       |       |       |       | 1,785  | 298     |
| 203.....                      | Cowpeas              | do.            |       | 165   | 210   | 920   | 435   | 385   | 10    | 0     | 50    |       |       |       |       |       |       | 1,800  | 300     |
| 222.....                      | Fallow               | Fallowed       |       | 540   | 230   | 625   | 285   | 455   | 70    | 0     | 30    |       |       |       |       |       |       | 1,465  | 244     |
| 223.....                      | Cowpeas              | Spring plowed  |       | 510   | 100   | 725   | 465   | 255   | 145   | 0     | 165   |       |       |       |       |       |       | 1,755  | 293     |
| 272.....                      | Fallow               | Fallowed       |       | 580   | 185   | 920   | 490   | 375   | 105   | 0     | 255   |       |       |       |       |       |       | 2,145  | 358     |
| 273.....                      | Cowpeas              | Spring plowed  |       | 460   | 80    | 715   | 295   | 300   | 0     | 0     | 255   |       |       |       |       |       |       | 1,565  | 261     |
| Average                       |                      |                |       |       |       | 788   | 418   | 376   | 79    | 0     | 131   |       |       |       |       |       |       | 1,792  | 299     |

<sup>2</sup> Crop produced but not recorded.<sup>3</sup> Plowed under for green manure in 1912 to 1920.



## CROP YIELDS AT THE AMARILLO (TEX.) FIELD STATION

TABLE 71.—Annual acre yields of specified crops grown in rotations on individual plots at Amarillo Tex., in one or more years from 1906 to 1919

[For descriptions of rotations, see pages 32-43. Repeated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such repetitions were used. For climatic conditions 1907 to 1919, see Figure 42 (p. 64), Miscellaneous Circular No. 81. Yields of total weight of corn, kafir, and cowpea hay are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop      | Tillage method         | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | Total | Average |
|-------------------------------|--------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>           |                    |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Winter wheat.....  | Late fall plowed.....  | 4.5  | 1.7  | 12.7 | 0    | 10.3 | 3.1  | 5.5  | 0    | 21.8 | 18.3 | 5.8  | 6.5  | 1.7  | 12.3 | 89.4  | 7.5     |
| B.....                        | do.....            | Early fall plowed..... | 5.3  | 1.4  | 14.3 | 0    | 9.7  | 3.7  | 7.2  | 1.3  | 23.0 | 24.0 | 3.6  | 7.5  | 10.5 | 19.0 | 115.5 | 9.6     |
| E.....                        | do.....            | Subsoiled.....         | 5.9  | 2.1  | 16.5 | 0    | 9.2  | 1.2  | 3.3  | 1.3  | 19.3 | 19.7 | 4.5  | 9.5  | 8.7  | 17.0 | 103.1 | 8.6     |
| F.....                        | do.....            | Fall listed.....       | 5.8  | 3.4  | 15.3 | 0    | 5.5  | 2.2  | 5.7  | 1.2  | 14.2 | 22.2 | 6.8  | 7.3  | 9.2  | 18.7 | 106.4 | 8.9     |
| Average.....                  |                    |                        |      | 2.2  | 14.7 | 0    |      | 2.6  | 5.4  | 1.0  | 19.6 | 21.1 | 5.2  | 7.7  | 7.5  | 16.8 | 103.6 | 8.7     |
| C or D.....                   | Fallow.....        | Fallowed.....          | 3.8  | 2.0  | 19.5 | 1.5  | 8.6  | 4.7  | 12.0 | 4.8  | 24.0 | 16.9 | 4.8  | 10.3 | 10.2 | 17.8 | 128.5 | 10.7    |
| 20.....                       | Winter rye.....    | Green manured.....     | 2.8  | 1.1  | 11.0 | 0    | 5.2  | 2.2  | 11.5 | 1.7  | 17.2 | 15.9 | 4.9  | 5.8  |      |      | 71.3  | 7.1     |
| 22.....                       | do.....            | do.....                | 6.7  | 2.8  | 17.0 | 0    | 6.8  | 2.2  | 10.3 | 2.7  | 15.3 | 15.9 | 4.1  | 3.8  |      |      | 74.1  | 7.4     |
| 24.....                       | do.....            | do.....                | 5.5  | 2.7  | 17.0 | 0    | 7.7  | 1.8  | 10.7 | 2.7  | 16.7 | 12.8 | 5.4  | 4.2  |      |      | 74.0  | 7.4     |
| 26.....                       | Corn.....          | Disked.....            | 5.2  | 2.7  | 11.3 | 0    | 6.2  | 1.5  | 11.3 | 2.0  | 16.3 | 13.9 | 4.3  | 6.0  |      |      | 69.3  | 6.9     |
| 28.....                       | Fallow.....        | Fallowed.....          | 5.2  | 2.7  | 14.3 | 4.2  | 6.6  | 4.8  | 13.5 | 3.8  | 20.7 | 14.5 | 5.7  | 7.7  |      |      | 91.9  | 9.2     |
| 91.....                       | Peas.....          | Green manured.....     | 2.0  | 2.7  | 12.5 | 0    | 7.2  | 2.0  | 12.1 | 2.8  | 16.3 | 12.3 | 4.3  | 6.0  |      |      | 71.0  | 7.1     |
| 93.....                       | do.....            | do.....                | 6.8  | 2.4  | 12.8 | 0    | 7.0  | 2.0  | 9.7  | 2.5  | 16.3 | 11.4 | 3.0  | 3.2  |      |      | 63.3  | 6.3     |
| 95.....                       | do.....            | do.....                | 5.3  | 2.9  | 12.7 | 0    | 8.8  | 2.5  | 10.8 | 2.8  | 18.2 | 11.8 | 4.3  | 4.0  |      |      | 70.0  | 7.0     |
| 97.....                       | Corn.....          | Disked.....            | 4.7  | 2.8  | 12.0 | 0    | 8.3  | .8   | 9.5  | 2.0  | 16.2 | 9.1  | 2.8  | 6.3  |      |      | 61.6  | 6.2     |
| 154.....                      | Fallow.....        | Fallowed.....          |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 9.2  | 9.2   | 9.2     |
| 155.....                      | do.....            | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 6.3  | 6.3   | 6.3     |
| 156.....                      | do.....            | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 7.2  | 7.2   | 7.2     |
| 164.....                      | (Cowpeas.....      | Disked.....            |      |      |      |      |      |      |      |      |      |      |      |      | 2.0  | 18.8 | 18.8  | 18.8    |
| 166.....                      | (Winter wheat..... | Fall plowed.....       |      |      |      |      |      |      |      |      |      |      |      |      | 6.3  | 19.2 | 19.2  | 19.2    |
| 167.....                      | Cowpeas.....       | Disked.....            |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 14.0 | 14.0  | 14.0    |
| 170.....                      | do.....            | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 13.8 | 13.8  | 13.8    |
| 261.....                      | Oats.....          | Fall plowed.....       |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 9.7  | 9.7   | 9.7     |
| 262.....                      | Corn.....          | Disked.....            |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 4.5  | 4.5   | 4.5     |
| 263.....                      | Milo.....          | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 5.0  | 5.0   | 5.0     |
| 264.....                      | Kafir.....         | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 1.2  | 5.3  | 5.3   | 5.3     |
| 265.....                      | Cowpeas.....       | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 1.2  | 5.7  | 5.7   | 5.7     |
| 266.....                      | do.....            | Green manured.....     |      |      |      |      |      |      |      |      |      |      |      |      | 1.8  | 4.5  | 4.5   | 4.5     |
| 267.....                      | Fallow.....        | Fallowed.....          |      |      |      |      |      |      |      |      |      |      |      |      | 0    | 6.5  | 6.5   | 6.5     |
| 268.....                      | do.....            | do.....                |      |      |      |      |      |      |      |      |      |      |      |      | 1.5  | 7.0  | 7.0   | 7.0     |
| Average.....                  |                    |                        |      | 2.5  | 13.4 | .5   |      | 2.2  | 11.0 | 2.6  | 17.0 | 13.1 | 4.3  | 5.0  |      | 8.1  | 31.5  | 8.2     |
| <b>SPRING WHEAT</b>           |                    |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Wheat.....         | Spring plowed.....     | 6.4  | 2.5  | 17.0 | 0    |      | 7.3  | 6.3  | 0    | 11.0 | 12.4 | 3.5  | 1.7  | 0    | 13.0 | 74.7  | 6.2     |
| B.....                        | do.....            | Fall plowed.....       | 6.0  | 1.7  | 14.0 | 2.8  |      | 10.0 | 8.5  | 1.8  | 12.8 | 11.0 | 7.0  | 3.8  | 3.2  | 13.2 | 89.8  | 7.5     |
| E.....                        | do.....            | Subsoiled.....         | 6.0  | 2.2  | 16.2 | 4.0  |      | 11.3 | 4.2  | .8   | 12.3 | 10.3 | 1.2  | 1.2  |      |      | 63.7  | 6.4     |
| F.....                        | do.....            | Fall listed.....       | 4.8  | 1.9  | 14.3 | 0    |      | 12.8 | 4.7  | 1.5  | 11.0 | 10.3 | .9   | 2.0  |      |      | 59.4  | 5.9     |
| G.....                        | do.....            | Spring plowed.....     | 4.5  | 1.8  | 15.3 | 0    |      | 11.4 | 4.8  | 1.2  | 11.0 | 12.1 | 2.1  | 1.7  |      |      | 61.4  | 6.1     |
| Average.....                  |                    |                        |      | 2.0  | 15.4 | 1.4  |      | 10.6 | 5.7  | 1.1  | 11.6 | 11.2 | 2.9  | 2.1  | 1.6  | 13.2 | 69.8  | 6.4     |
| C or D.....                   | Fallow.....        | Fallowed.....          | 4.9  | 2.8  | 16.0 | 10.5 |      | 19.0 | 9.5  | 9.3  | 13.8 | 11.6 | 4.7  | 3.5  | 2.8  | 14.5 | 118.0 | 9.8     |
| H or I.....                   | do.....            | do.....                |      |      |      |      | 7.4  | 6.1  | 10.8 | 10.5 | 13.5 | 10.5 | 7.7  | 4.2  |      |      | 63.3  | 9.0     |
| J or K.....                   | do.....            | do.....                |      |      |      |      | 8.2  | 11.3 | 9.3  | 10.7 | 12.2 | 10.5 | 8.5  | 2.3  |      |      | 64.8  | 9.3     |
| L or M.....                   | do.....            | do.....                |      |      |      |      | 7.5  | 3.5  | 8.3  | 6.2  | 12.5 | 9.9  | 6.8  | 2.3  |      |      | 49.5  | 7.1     |
| N or O.....                   | do.....            | do.....                |      |      |      |      | 7.7  | 3.8  | 9.0  | 6.2  | 10.0 | 10.0 | 4.3  | 2.3  |      |      | 45.6  | 6.5     |
| Average.....                  |                    |                        |      | 2.8  | 16.0 | 10.5 |      | 8.7  | 9.4  | 8.6  | 12.5 | 10.5 | 6.4  | 2.9  | 2.8  | 14.5 | 68.2  | 8.3     |
| 1.....                        | Corn.....          | Disked.....            | 8.0  | 1.0  | 8.8  | 0    | 7.0  | 12.2 | 6.3  | 1.0  | 11.8 | 14.5 | 1.7  | 4.3  |      |      | 61.6  | 6.2     |
| 2.....                        | do.....            | Spring plowed.....     | 4.7  | 2.8  | 8.0  | 0    | 6.8  | 11.7 | 9.3  | .5   | 10.2 | 12.9 | 1.9  | 3.0  |      |      | 60.3  | 6.0     |
| 3.....                        | do.....            | Fall plowed.....       | 7.8  | 1.4  | 8.5  | 0    | 8.0  | 5.7  | 1.3  | 0    | 11.7 | 10.6 | .6   | 1.3  |      |      | 41.1  | 4.1     |
| 4.....                        | Oats.....          | do.....                | 6.7  | .7   | 13.2 | 0    |      | 6.3  | 4.5  | 1.2  | 10.5 | 12.5 | .5   | 3.0  |      |      | 52.4  | 5.2     |
| 5.....                        | Fallow.....        | Fallowed.....          | 7.3  | 2.8  | 16.5 | 9.5  |      | 18.4 | 11.8 | 6.0  | 14.3 | 13.1 | 5.2  | 2.8  |      |      | 100.4 | 10.0    |
| 8.....                        | Oats.....          | Fall plowed.....       | 7.2  | 1.3  | 13.7 | 0    |      | 6.2  | 4.0  | 1.2  | 8.2  | 13.3 | .2   | 1.0  |      |      | 49.1  | 4.9     |
| 9.....                        | do.....            | Spring plowed.....     | 5.5  | 1.3  | 5.3  | 0    |      | 6.8  | 6.2  | .2   | 3.3  | 13.6 | 2.3  | 1.8  |      |      | 40.8  | 4.1     |
| 29.....                       | Winter rye.....    | Green manured.....     | 4.7  | 1.6  | 14.2 | 4.3  |      | 7.5  | 9.2  | 2.3  | 11.7 | 12.3 | 5.3  | 0    |      |      | 68.4  | 6.8     |
| 30.....                       | Peas.....          | do.....                | 6.7  | 2.5  | 19.7 | 0    |      | 11.3 | 8.7  | 2.5  | 10.7 | 10.5 | 5.8  | 1.2  |      |      | 72.9  | 7.3     |
| 570.....                      | Fallow.....        | Fallowed.....          |      |      |      |      |      |      |      |      |      | 8.8  | 2.3  | 3.5  |      |      | 14.6  | 4.9     |
| Average.....                  |                    |                        |      | 1.7  | 12.0 | 1.5  |      | 8.5  | 6.8  | 1.7  | 10.3 | 12.2 | 2.6  | 2.2  |      |      | 56.2  | 6.0     |
| <b>OATS</b>                   |                    |                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A.....                        | Oats.....          | Spring plowed.....     | 15.8 | 3.1  | 20.0 | 0    |      | 28.1 | 9.7  | 0    | 29.4 | 34.1 | 5.0  | .9   | 0    | 21.6 | 151.9 | 12.6    |
| B.....                        | do.....            | Fall plowed.....       | 13.6 | 4.7  | 32.2 | 0    |      | 27.5 | 14.1 | 2.5  | 30.9 | 31.7 | 12.2 | 2.5  | 8.1  | 27.2 | 193.6 | 16.1    |
| E.....                        | do.....            | Subsoiled.....         | 14.1 | 4.5  | 28.1 | 0    |      | 19.2 | 8.8  | 4.1  | 30.6 | 34.2 | .9   | .9   |      |      | 131.3 | 13.1    |
| F.....                        | do.....            | Fall listed.....       | 14.4 | 7.3  | 29.7 | 0    |      | 26.9 | 11.6 | 6.9  | 26.9 | 37.5 | 1.9  | 7.8  |      |      | 156.5 | 15.7    |
| Average.....                  |                    |                        |      | 4.9  | 27.5 | 0    |      | 25.4 | 11.1 | 3.4  | 29.5 | 34.4 | 5.0  | 3.0  | 4.1  | 24.4 | 158.3 | 14.4    |
| C or D.....                   | Fallow.....        | Fallowed.....          | 11.9 | 7.7  | 31.6 | 23.1 |      | 36.7 | 16.9 | 19.1 | 40.0 | 36.7 | 5.2  | 4.4  | 6.3  | 40.3 | 268.0 | 22.3    |
| 1.....                        | Wheat.....         | Fall plowed.....       | 14.4 | 3.0  | 28.1 | 10.0 | 11.3 | 25.6 | 7.8  | 7.8  | 16.9 | 33.3 | 2.5  | 3.1  |      |      | 138.1 | 13.8    |
| 2.....                        | do.....            | Spring plowed.....     | 8.1  | 1.1  | 23.4 | 0    | 13.6 | 35.6 | 9.7  | 3.1  | 7.5  | 37.0 | 1.3  | 2.8  |      |      | 121.5 | 12.2    |
| 3.....                        | do.....            | Fall plowed.....       | 14.2 | 5.5  | 27.5 | 17.8 | 12.2 | 23.9 | 7.5  | 4.7  | 13.8 | 28.6 | .3   | 0    |      |      | 129.6 | 13.0    |
| 4.....                        | Corn.....          | Disked.....            | 16.7 | 3.0  | 22.8 | 0    |      | 32.0 | 13.4 | 3.8  | 37.2 | 32.5 | 1.3  | 1.3  |      |      | 147.3 | 14.7    |
| 5.....                        | Wheat.....         | Fall plowed.....       | 14.4 | 2.7  | 24.4 | 15.3 |      | 29.7 | 13.8 | 7.8  | 26.3 | 32.5 | .6   | .9   |      |      | 154.0 | 15.4    |
| 6.....                        | Barley.....        | do.....                | 15.5 | 3.1  | 31.3 | 0    |      | 35.6 | 9.1  | 7.2  | 26.9 | 31.7 | .3   | 1.3  |      |      | 146.5 | 14.7    |
| 7.....                        | Corn.....          | Spring plowed.....     | 10.5 | 4.8  | 21.3 | 0    |      | 36.1 | 15.0 | 1.9  | 21.9 | 30.9 | .9   | .9   |      |      | 133.7 | 13.4    |
| 8.....                        | Fallow.....        | Fallowed.....          | 16.3 | 5.9  | 33.4 | 25.6 |      | 37.5 | 18.4 | 15.6 | 34.1 | 33.8 | 3.1  | 1.9  |      |      | 209.3 | 20.9    |
| 9.....                        | Corn.....          | Spring plowed.....     | 11.1 | 3.4  | 22.5 | 0    |      | 35.9 | 19.4 | .9   | 20.3 | 32.5 | 1.6  | 1.3  |      |      | 137.8 | 13.8    |
| 20.....                       | do.....            | Disked.....            | 12.0 | 3.1  | 18.8 | 0    |      | 23.4 | 14.7 | 2.2  | 32.2 | 33.0 | 4.1  | 1.9  |      |      | 132.4 | 13.2    |
| 22.....                       | Kafir.....         | do.....                | 13.6 | 1.6  | 18.8 | 0    |      | 30.0 | 9.4  | 2.2  | 29.4 | 33.3 | 4.1  | 2.5  |      |      | 131.3 | 13.1    |
| 24.....                       | Milo.....          | do.....                | 16.3 | 1.6  | 21.6 | 0    |      | 24.1 | 11.6 | 2.2  | 28.4 | 32.2 | 5.6  | 3.1  |      |      | 139.4 | 13.9    |
| 26.....                       | Winter rye.....    | Green manured.....     | 11.7 | 4.8  | 31.9 | 5.0  |      | 18.0 | 33.8 | 5.4  | 32.5 | 31.6 | 8.8  | 0    |      |      | 141.7 | 14.2    |
| 28.....                       | Corn.....          | Disked.....            | 12.7 | 17.5 | 23.8 | 0    |      | 24.7 | 12.8 | 3.4  | 32.5 | 30.9 | 1.6  | .9   |      |      | 148.1 | 14.8    |
| 29.....                       | do.....            | do.....                | 10.8 | 3.6  | 24.7 | 0    |      | 34.7 | 15.9 | 4.4  | 33.8 | 35.0 | 3.8  | 2.2  |      |      | 158.1 | 15.8    |
| 30.....                       | do.....            | do.....                | 12.5 | 4.2  | 25.6 | 0    |      | 30.2 | 15.0 | 4.7  | 30.0 | 29.8 | 2.2  | 1.9  |      |      | 143.6 | 14.4    |
| 91.....                       | do.....            | do.....                | 13.4 | 3.8  | 20.9 | 0    | 14.1 | 27.2 | 14.1 | 1.9  | 34.4 | 23.9 | 3.4  | .9   |      |      | 130.5 | 13.1    |
| 93.....                       | Kafir.....         | do.....                | 15.3 | 1.6  | 14.1 | 0    | 12.5 | 23.3 | 6.9  | 1.3  | 24.1 | 28.9 | 4.4  | 1.6  |      |      | 109.2 | 10.6    |
| 95.....                       | Milo.....          | do.....                | 11.3 | 1.4  | 16.9 | 0    | 11.1 | 27.7 | 12.2 | 1.6  | 29.1 | 27.3 | 4.4  | 3.1  |      |      | 123.7 | 12.4    |



## CROP YIELDS AT THE AMARILLO (TEX.) FIELD STATION—Continued

TABLE 71.—Annual acre yields of specified crops grown in rotations on individual plots at Amarillo, Tex., in one or more years from 1906 to 1919—Continued

| Crop and rotation<br>No. or plot | Previous crop     | Tillage method     | 1906  | 1907  | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917   | 1918  | 1919  | Total  | Average |
|----------------------------------|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|---------|
| OATS—continued                   |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |       |       |        |         |
| 97.....                          | Peas.....         | Green manured..... | 13.9  | 5.8   | 27.5  | 8.4   | 5.3   | 25.9  | 15.0  | 7.5   | 26.9  | 24.4  | 12.5  | 1.6    |       |       | 155.5  | 15.6    |
| 157.....                         | Cowpeas.....      | Spring plowed..... |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| 261.....                         | Winter wheat..... | Fall plowed.....   |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| 277.....                         | Corn.....         | Disked.....        |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| 279.....                         | Cowpeas.....      | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| 281.....                         | Kafir.....        | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| 291.....                         | Milo.....         | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     |       |        |         |
| Average.....                     |                   |                    |       | 4.8   | 24.0  | 4.1   |       | 29.1  | 12.8  | 4.5   | 26.4  | 31.2  | 3.3   | 1.6    |       |       | 141.0  | 14.1    |
| CORN TOTAL                       |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |       |       |        |         |
| A.....                           | Corn.....         | Spring plowed..... | 2,380 | 3,470 | 4,720 | 600   | 2,380 | 2,510 | 2,340 | 700   | 1,580 | 8,150 | 4,100 | 7,800  | 2,230 | 2,680 | 40,880 | 3,407   |
| B.....                           | do.....           | Fall plowed.....   | 2,440 | 3,370 | 6,180 | 1,500 | 2,680 | 2,740 | 1,730 | 380   | 4,420 | 8,200 | 3,690 | 6,500  | 1,660 | 2,000 | 42,370 | 3,531   |
| E.....                           | do.....           | Subsoiled.....     | 2,490 | 3,570 | 5,610 | 1,110 | 2,790 | 2,220 | 2,150 | 430   | 5,250 | 7,550 | 3,120 | 5,500  |       |       | 36,510 | 3,651   |
| F.....                           | do.....           | Spring listed..... | 2,350 | 2,280 | 4,520 | 1,720 | 2,210 | 2,450 | 2,230 | 220   | 2,810 | 6,370 | 2,900 | 5,360  |       |       | 30,860 | 3,086   |
| G.....                           | do.....           | do.....            | 2,670 | 3,900 | 3,720 | 1,110 | 2,760 | 2,630 | 2,030 | 230   | 4,110 | 7,380 | 3,350 | 5,840  |       |       | 34,300 | 3,430   |
| Average.....                     |                   |                    |       | 3,318 | 4,950 | 1,208 |       | 2,510 | 2,096 | 392   | 3,634 | 7,530 | 3,432 | 6,200  | 1,945 | 2,340 | 36,858 | 3,421   |
| C or D.....                      | Fallow.....       | Fallowed.....      | 2,310 | 4,110 | 5,630 | 2,340 | 2,710 | 2,700 | 3,070 | 1,750 | 5,970 | 8,600 | 4,620 | 6,200  | 3,030 | 2,650 | 50,670 | 4,223   |
| 1.....                           | Oats.....         | Fall plowed.....   | 2,430 | 3,110 | 3,900 | 1,610 | 2,150 | 2,950 | 1,770 | 720   | 3,730 | 7,800 | 4,580 | 8,600  |       |       | 38,770 | 3,877   |
| 2.....                           | do.....           | Spring plowed..... | 2,380 | 3,140 | 3,850 | 1,500 | 2,410 | 2,920 | 1,580 | 300   | 2,860 | 7,110 | 3,270 | 10,350 |       |       | 36,880 | 3,688   |
| 3.....                           | do.....           | Fall plowed.....   | 2,430 | 2,860 | 4,480 | 1,430 | 1,970 | 2,470 | 1,420 | 700   | 4,110 | 6,330 | 3,180 | 7,200  |       |       | 34,180 | 3,418   |
| 4.....                           | Wheat.....        | do.....            | 2,170 | 2,900 | 4,510 | 1,510 | 2,140 | 2,700 | 2,220 | 750   | 3,070 | 7,650 | 3,130 | 3,150  |       |       | 31,560 | 3,159   |
| 6.....                           | Oats.....         | do.....            | 2,540 | 2,750 | 4,480 | 1,220 | 1,900 | 2,880 | 1,780 | 580   | 3,520 | 7,400 | 3,120 | 4,350  |       |       | 32,060 | 3,208   |
| 7.....                           | Barley.....       | Spring plowed..... | 2,580 | 2,910 | 4,140 | 1,380 | 2,110 | 2,470 | 1,850 | 410   | 2,870 | 6,970 | 2,610 | 4,200  |       |       | 29,810 | 2,981   |
| 9.....                           | Wheat.....        | do.....            | 2,310 | 3,360 | 3,690 | 1,270 | 1,940 | 2,490 | 2,290 | 440   | 3,090 | 7,580 | 2,840 | 3,700  |       |       | 30,750 | 3,075   |
| 20.....                          | Winter wheat..... | Fall plowed.....   | 2,210 | 2,760 | 4,440 | 1,420 | 1,870 | 2,810 | 2,060 | 820   | 4,730 | 6,850 | 3,730 | 5,650  |       |       | 35,270 | 3,527   |
| 26.....                          | Oats.....         | do.....            | 2,670 | 3,010 | 3,950 | 1,330 | 2,140 | 2,620 | 1,550 | 590   | 3,780 | 7,200 | 3,700 | 4,200  |       |       | 31,930 | 3,193   |
| 28.....                          | Winter wheat..... | do.....            | 2,370 | 3,110 | 4,840 | 1,570 | 1,900 | 2,500 | 2,340 | 840   | 4,810 | 7,550 | 3,670 | 4,850  |       |       | 36,060 | 3,608   |
| 29.....                          | Wheat.....        | do.....            | 2,860 | 3,430 | 4,390 | 1,710 | 2,310 | 2,900 | 2,030 | 1,080 | 3,850 | 6,700 | 3,670 | 2,850  |       |       | 32,610 | 3,261   |
| 30.....                          | do.....           | do.....            | 2,770 | 3,750 | 4,630 | 2,180 | 2,500 | 2,920 | 2,390 | 1,080 | 4,010 | 6,650 | 3,240 | 4,450  |       |       | 35,300 | 3,530   |
| 91.....                          | Winter wheat..... | do.....            | 2,390 | 3,360 | 4,710 | 1,920 | 2,220 | 2,760 | 1,930 | 830   | 4,580 | 7,050 | 3,760 | 4,400  |       |       | 35,300 | 3,530   |
| 97.....                          | Oats.....         | do.....            | 2,320 | 3,750 | 5,000 | 1,660 | 2,300 | 2,950 | 1,650 | 510   | 4,250 | 7,300 | 3,650 | 3,450  | 860   | 2,460 | 34,170 | 3,417   |
| 158.....                         | Cowpeas.....      | Spring plowed..... |       |       |       |       |       |       |       |       |       |       |       |        | 670   | 2,460 | 2,460  | 2,460   |
| 262.....                         | Winter wheat..... | Fall plowed.....   |       |       |       |       |       |       |       |       |       |       |       |        | 1,780 | 1,780 | 1,780  | 1,780   |
| 277.....                         | Oats.....         | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 1,080 | 2,400 | 2,400  | 2,400   |
| 278.....                         | Cowpeas.....      | Spring plowed..... |       |       |       |       |       |       |       |       |       |       |       |        | 2,840 | 2,380 | 2,380  | 2,380   |
| 282.....                         | Kafir.....        | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 1,280 | 2,440 | 2,440  | 2,440   |
| 292.....                         | Milo.....         | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 810   | 2,140 | 2,140  | 2,140   |
| Average.....                     |                   |                    |       | 3,157 | 4,358 | 1,551 |       | 2,739 | 2,061 | 689   | 3,804 | 7,153 | 3,439 | 5,100  |       | 2,267 | 24,416 | 3,054   |
| CORN GRAIN                       |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |       |       |        |         |
| A.....                           | Corn.....         | Spring plowed..... | 7.4   | 2.7   | 20.3  | .6    | 3.7   | 8.1   | 2.6   | 0     | 1.1   | 55.3  | 10.0  | 33.6   | 0     | 18.7  | 153.0  | 12.8    |
| B.....                           | do.....           | Fall plowed.....   | 8.6   | 1.4   | 22.9  | 2.7   | 4.9   | 9.2   | .7    | 0     | 3.6   | 54.0  | 7.2   | 22.9   | 0     | 11.4  | 136.0  | 11.3    |
| E.....                           | do.....           | Subsoiled.....     | 7.0   | 1.1   | 25.7  | 1.7   | 4.6   | 7.1   | 1.0   | 0     | 5.1   | 46.4  | 3.7   | 17.1   |       |       | 108.9  | 10.9    |
| F.....                           | do.....           | Spring listed..... | 5.9   | 1.0   | 25.3  | 7.3   | 2.6   | 7.6   | 2.0   | 0     | 3.3   | 45.0  | 5.1   | 17.9   |       |       | 114.5  | 11.5    |
| G.....                           | do.....           | do.....            | 5.9   | 3.4   | 24.1  | 3.4   | 5.9   | 7.9   | 1.3   | 0     | 10.6  | 46.0  | 5.6   | 14.8   |       |       | 117.1  | 11.7    |
| Average.....                     |                   |                    |       | 1.9   | 23.7  | 3.1   |       | 8.0   | 1.5   | 0     | 4.7   | 49.3  | 6.3   | 21.3   | 0     | 15.1  | 125.9  | 11.6    |
| C or D.....                      | Fallow.....       | Fallowed.....      | 7.1   | 5.7   | 27.9  | 6.4   | 4.9   | 9.3   | 3.3   | 0     | 8.0   | 52.7  | 7.4   | 17.7   | 0     | 14.9  | 153.3  | 12.8    |
| 1.....                           | Oats.....         | Fall plowed.....   | 7.6   | 3.4   | 16.6  | 0     | 4.3   | 11.8  | 1.3   | 0     | 7.1   | 48.0  | 12.3  | 35.3   |       |       | 135.8  | 13.6    |
| 2.....                           | do.....           | Spring plowed..... | 8.0   | 2.0   | 12.9  | 0     | 3.4   | 10.4  | .9    | 0     | 3.9   | 42.3  | 7.4   | 36.2   |       |       | 116.0  | 11.6    |
| 3.....                           | do.....           | Fall plowed.....   | 8.3   | 1.7   | 17.6  | 0     | 2.2   | 6.9   | 1.0   | 0     | 6.1   | 38.6  | 2.8   | 26.3   |       |       | 101.0  | 10.1    |
| 4.....                           | Wheat.....        | do.....            | 5.0   | 1.1   | 17.6  | 0     | 3.1   | 8.9   | 1.1   | 0     | 1.9   | 44.0  | 3.5   | 6.8    |       |       | 84.9   | 8.5     |
| 6.....                           | Oats.....         | do.....            | 7.7   | 1.1   | 18.3  | 0     | 2.6   | 10.1  | .7    | 0     | 2.9   | 37.9  | 3.7   | 8.3    |       |       | 83.0   | 8.3     |
| 7.....                           | Barley.....       | Spring plowed..... | 7.1   | 2.0   | 17.0  | 0     | 3.1   | 9.0   | .7    | 0     | 2.0   | 42.0  | 3.5   | 9.1    |       |       | 85.3   | 8.5     |
| 9.....                           | Wheat.....        | do.....            | 7.9   | 1.4   | 14.3  | 0     | 3.1   | 9.2   | 1.6   | 0     | 2.6   | 41.7  | 3.3   | 6.1    |       |       | 80.2   | 8.0     |
| 20.....                          | Winter wheat..... | Fall plowed.....   | 10.0  | 2.0   | 20.9  | 0     | 2.9   | 7.7   | 1.8   | 0     | 7.0   | 40.7  | 2.4   | 17.4   |       |       | 99.9   | 10.0    |
| 26.....                          | Oats.....         | do.....            | 11.9  | 2.3   | 13.9  | 0     | 5.6   | 9.3   | .9    | 0     | 4.7   | 41.6  | 4.0   | 5.1    |       |       | 81.8   | 8.2     |
| 28.....                          | Winter wheat..... | do.....            | 6.4   | 2.4   | 23.1  | 0     | 3.9   | 6.4   | 2.6   | 0     | 6.7   | 41.6  | 4.9   | 11.7   |       |       | 99.4   | 9.9     |
| 29.....                          | Wheat.....        | do.....            | 12.6  | 3.1   | 20.1  | 0     | 2.6   | 10.0  | 2.6   | 0     | 4.1   | 40.1  | 4.0   | 4.2    |       |       | 88.2   | 8.8     |
| 30.....                          | do.....           | do.....            | 11.6  | 2.1   | 19.1  | 0     | 2.2   | 8.1   | 4.4   | 0     | 4.9   | 39.6  | 2.3   | 11.0   |       |       | 91.5   | 9.2     |
| 91.....                          | Winter Wheat..... | do.....            | 9.0   | 3.0   | 25.1  | 0     | 2.6   | 8.0   | 1.1   | 0     | 6.6   | 42.9  | 3.5   | 7.6    |       |       | 97.8   | 9.8     |
| 97.....                          | Oats.....         | do.....            | 7.1   | 3.6   | 26.5  | 0     | 3.5   | 10.9  | .9    | 0     | 4.6   | 44.0  | 4.0   | 4.3    |       |       | 97.9   | 9.8     |
| 158.....                         | Cowpeas.....      | Spring plowed..... |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 15.0  | 15.0   | 15.0    |
| 262.....                         | Winter wheat..... | Fall plowed.....   |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 12.6  | 12.6   | 12.6    |
| 277.....                         | Oats.....         | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 16.9  | 16.9   | 16.9    |
| 278.....                         | Cowpeas.....      | Spring plowed..... |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 12.7  | 12.7   | 12.7    |
| 282.....                         | Kafir.....        | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 16.8  | 16.8   | 16.8    |
| 292.....                         | Milo.....         | do.....            |       |       |       |       |       |       |       |       |       |       |       |        | 0     | 7.7   | 7.7    | 7.7     |
| Average.....                     |                   |                    |       | 2.2   | 18.7  | 0     |       | 9.1   | 1.5   | 0     | 4.7   | 41.8  | 4.4   | 13.5   | 0     | 13.6  | 71.2   | 10.8    |
| BARLEY                           |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |       |       |        |         |
| A.....                           | Barley.....       | Spring plowed..... | 4.5   | 3.1   | 7.7   | 0     |       | 12.2  | 2.7   | 0     | 21.0  | 16.5  | 1.3   | 1.3    |       |       | 65.8   | 6.6     |
| B.....                           | do.....           | Fall plowed.....   | 5.1   | 2.9   | 14.0  | 5.8   |       | 11.7  | 1.7   | 0     | 16.7  | 17.3  | 3.8   | .6     |       |       | 74.5   | 7.5     |
| E.....                           | do.....           | Subsoiled.....     | 6.3   | 2.7   | 11.9  | 0     |       | 10.2  | 1.5   | 0     | 17.1  | 16.0  | .2    | .4     |       |       | 60.0   | 6.0     |
| F.....                           | do.....           | Fall listed.....   | 5.9   | 3.0   | 10.8  | 0     |       | 11.4  | 1.5   | 0     | 13.1  | 17.7  | .7    | 2.7    |       |       | 60.9   | 6.1     |
| Average.....                     |                   |                    |       | 2.9   | 11.1  | 1.5   |       | 11.4  | 1.9   | 0     | 17.0  | 17.0  | 1.5   | 1.3    |       |       | 65.3   | 6.6     |
| C or D.....                      | Fallow.....       | Fallowed.....      | 6.0   | 5.0   | 15.2  | 17.5  |       | 15.0  | 4.2   | 4.2   | 19.6  | 16.7  | 2.7   | .8     |       |       | 100.9  | 10.1    |
| 6.....                           | Corn.....         | Disked.....        | 7.8   | 2.5   | 7.5   | 0     |       | 11.9  | 1.7   | 0     | 18.8  | 17.5  | .3    | .2     |       |       | 60.4   | 6.0     |
| 7.....                           | Oats.....         | Spring plowed..... | 5.9   | 2.3   | 8.1   | 0     |       | 12.3  | 1.0   | 0     | 2.7   | 17.4  | .3    | .4     |       |       | 44.5   | 4.5     |
| Average.....                     |                   |                    |       |       |       |       |       |       |       |       |       |       |       |        |       |       |        |         |



## CROP YIELDS AT THE AMARILLO (TEX.) FIELD STATION—Continued

TABLE 71.—Annual acre yields of specified crops grown in rotations on individual plots at Amarillo, Tex., in one or more years from 1906 to 1919—Continued

| Crop and rotation<br>No. or plot | Previous crop | Tillage method | 1906   | 1907  | 1908  | 1909  | 1910  | 1911  | 1912  | 1913  | 1914  | 1915  | 1916  | 1917  | 1918  | 1919  | Total  | Average |
|----------------------------------|---------------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>MILO GRAIN</b>                |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Aa                               | Milo          | Spring plowed  |        | 18.1  | 40.3  | 2.6   | 16.4  | 35.3  | 33.4  | 0     | 17.6  | 41.7  | 1.7   | 22.1  | 3.3   | 47.9  | 264.0  | 22.0    |
| Ba                               | do.           | Fall plowed    |        | 21.6  | 32.8  | .9    | 19.3  | 31.4  | 27.4  | 0     | 29.0  | 49.5  | 2.1   | 14.7  | 1.2   | 52.8  | 263.4  | 22.0    |
| Fa                               | do.           | Spring listed  |        |       |       |       |       |       | 27.4  | 0     | 23.1  | 28.4  | 3.3   | 5.0   | 1.6   | 24.3  | 113.1  | 14.1    |
| Ga                               | do.           | do.            |        | 31.7  | 37.9  | 10.9  | 20.7  | 17.4  | 23.3  | 0     | 23.4  | 43.3  | 7.9   | 9.0   | 3.3   | 22.1  | 230.2  | 19.2    |
| Average                          |               |                |        |       | 37.0  | 4.8   |       | 28.0  | 27.9  | 0     | 23.3  | 40.7  | 4.0   | 12.7  | 2.4   | 36.8  | 217.7  | 19.3    |
| Ca or Da                         | Fallow        | Fallowed       |        |       |       |       | 22.1  | 27.9  | 24.1  | 0     | 27.1  | 58.6  | 24.8  | 20.5  | 15.5  | 37.4  | 235.9  | 26.2    |
| Ab                               | Milo          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 4.5   | 48.8  | 48.8   | 48.8    |
| Bb                               | do.           | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 8.3   | 39.7  | 39.7   | 39.7    |
| P                                | do.           | Subsoiled      |        |       |       |       |       |       |       |       |       |       |       |       | 14.3  | 48.1  | 48.1   | 48.1    |
| Fb                               | do.           | Spring listed  |        |       |       |       |       |       |       |       |       |       |       |       | 3.4   | 33.3  | 33.3   | 33.3    |
| Gb                               | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 7.2   | 35.9  | 35.9   | 35.9    |
| T                                | do.           | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 10.0  | 41.4  | 41.4   | 41.4    |
| Average                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       | 41.2  | 41.2   | 41.2    |
| Cb or Db                         | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 12.9  | 54.3  | 54.3   | 54.3    |
| H or I                           | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 18.6  | 52.8  | 52.8   | 52.8    |
| J or K                           | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 17.1  | 45.0  | 45.0   | 45.0    |
| L or M                           | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 15.3  | 49.0  | 49.0   | 49.0    |
| N or O                           | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 7.9   | 50.7  | 50.7   | 50.7    |
| P or Q                           | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2.2   | 51.6  | 51.6   | 51.6    |
| Average                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       | 50.6  | 50.6   | 50.6    |
| 151                              | Winter rye    | Green manured  |        |       |       |       |       |       |       |       |       |       |       |       |       | 42.8  | 42.8   | 42.8    |
| 154                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       |       | 43.6  | 43.6   | 43.6    |
| 155                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 11.0  | 43.8  | 43.8   | 43.8    |
| 156                              | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2.4   | 45.0  | 45.0   | 45.0    |
| 157                              | Oats          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 6.3   | 50.5  | 50.5   | 50.5    |
| 158                              | Corn          | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 8.3   | 49.0  | 49.0   | 49.0    |
| 159                              | Milo          | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 7.6   | 53.1  | 53.1   | 53.1    |
| 161                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 6.9   | 60.0  | 60.0   | 60.0    |
| 162                              | do.           | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 4.7   | 44.1  | 44.1   | 44.1    |
| 163                              | do.           | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 4.0   | 46.6  | 46.6   | 46.6    |
| 163                              | Kafir         | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 16.2  | 42.9  | 42.9   | 42.9    |
| 165                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 22.9  | 43.8  | 43.8   | 43.8    |
| 166                              | Winter wheat  | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 13.1  | 30.2  | 30.2   | 30.2    |
| 168                              | Kafir         | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 14.8  | 50.7  | 50.7   | 50.7    |
| 169                              | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 3.1   | 51.6  | 51.6   | 51.6    |
| 170                              | Winter wheat  | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 6.5   | 38.1  | 38.1   | 38.1    |
| 263                              | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2.6   | 51.7  | 51.7   | 51.7    |
| 291                              | Oats          | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 12.2  | 41.2  | 41.2   | 41.2    |
| 292                              | Corn          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 3.8   | 45.5  | 45.5   | 45.5    |
| 294                              | Kafir         | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 14.3  | 45.7  | 45.7   | 45.7    |
| 295                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 12.9  | 44.1  | 44.1   | 44.1    |
| 296                              | do.           | Green manured  |        |       |       |       |       |       |       |       |       |       |       |       | 15.7  | 49.3  | 49.3   | 49.3    |
| 297                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 12.6  | 45.0  | 45.0   | 45.0    |
| 298                              | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 13.4  | 45.5  | 45.5   | 45.5    |
| 299                              | Sudan grass   | Green manured  |        |       |       |       |       |       |       |       |       |       |       |       | 7.4   | 45.9  | 45.9   | 45.9    |
| 300                              | Pinto beans   | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 19.5  | 50.0  | 50.0   | 50.0    |
| 301                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 17.1  | 54.1  | 54.1   | 54.1    |
| 302                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 9.1   | 58.6  | 58.6   | 58.6    |
| 570                              | do.           | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 26.7  | 51.4  | 51.4   | 51.4    |
| Average                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       | 47.0  | 47.0   | 47.0    |
| 24                               | Winter wheat  | Fall plowed    |        | 33.6  | 46.2  | 8.6   | 21.7  | 28.8  | 26.2  | 0     | 22.9  | 55.7  | 23.8  | 15.0  |       |       | 260.8  | 26.1    |
| 95                               | do.           | do.            |        | 22.1  | 46.7  | 11.4  | 19.3  | 24.1  | 27.1  | 0     | 26.0  | 52.9  | 24.7  | 18.6  |       |       | 253.6  | 25.4    |
| Average                          |               |                |        | 27.9  | 46.5  | 10.0  |       | 26.5  | 26.7  | 0     | 24.5  | 54.3  | 24.3  | 16.8  |       |       | 257.2  | 25.8    |
| <b>KAFIR TOTAL</b>               |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| Aa                               | Kafir         | Spring plowed  | 8,820  | 5,270 | 6,570 | 2,120 | 6,100 | 5,650 | 6,870 | 280   | 4,290 | 4,600 | 3,600 | 4,200 | 2,300 | 4,380 | 50,130 | 4,178   |
| Fa                               | do.           | Fall plowed    | 11,040 | 7,840 | 7,210 | 1,590 | 5,770 | 8,580 | 5,660 | 170   | 4,660 | 4,500 | 3,300 | 3,920 | 1,450 | 3,700 | 52,580 | 4,382   |
| Fa                               | do.           | Spring listed  |        |       |       |       |       |       | 6,140 | 480   | 3,990 | 3,860 | 3,710 | 2,050 | 1,770 | 4,080 | 26,080 | 3,260   |
| Ga                               | do.           | do.            | 9,450  | 5,440 | 6,570 | 3,000 | 6,290 | 1,980 | 4,290 | 760   | 3,030 | 4,560 | 4,240 | 1,620 | 1,970 | 4,230 | 41,630 | 3,469   |
| Average                          |               |                |        | 6,183 | 6,783 | 2,237 |       | 5,403 | 5,740 | 423   | 3,993 | 4,365 | 3,713 | 2,948 | 1,873 | 4,098 | 42,605 | 3,822   |
| Ca or Da                         | Fallow        | Fallowed       |        |       |       |       |       |       | 6,163 | 2,240 | 5,300 | 5,760 | 5,790 | 5,950 | 3,000 | 5,180 | 39,380 | 4,923   |
| 22                               | Winter wheat  | Fall plowed    | 9,520  | 7,780 | 8,840 | 3,710 | 5,755 | 9,790 | 6,990 | 710   | 4,810 | 5,760 | 7,200 | 4,450 |       |       | 60,040 | 6,094   |
| 93                               | do.           | do.            | 10,820 | 8,930 | 9,800 | 4,650 | 6,360 | 9,100 | 5,050 | 800   | 4,700 | 5,840 | 5,820 | 4,420 |       |       | 59,110 | 5,911   |
| Average                          |               |                |        | 8,355 | 9,320 | 4,180 |       | 9,445 | 6,020 | 755   | 4,755 | 5,800 | 6,510 | 4,435 |       |       | 59,575 | 5,958   |
| Ab                               | Kafir         | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 1,660 | 5,450 | 5,480  | 5,480   |
| Bb                               | do.           | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 2,100 | 5,350 | 5,350  | 5,350   |
| Average                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       | 5,415 | 5,415  | 5,415   |
| Cb or Db                         | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 1,050 | 6,000 | 6,000  | 6,000   |
| 160                              | Kafir         | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 2,460 | 4,430 | 4,430  | 4,430   |
| 161                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2,620 | 5,500 | 5,500  | 5,500   |
| 162                              | Milo          | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 3,270 | 4,800 | 4,800  | 4,800   |
| 163                              | do.           | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 1,420 | 5,130 | 5,130  | 5,130   |
| 165                              | Cowpeas       | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 2,410 | 5,050 | 5,050  | 5,050   |
| 167                              | Milo          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 2,380 | 6,700 | 6,700  | 6,700   |
| 168                              | Winter wheat  | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2,380 | 5,580 | 5,580  | 5,580   |
| 169                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 2,040 | 4,900 | 4,900  | 4,900   |
| 170                              | Cowpeas       | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 1,780 | 5,350 | 5,350  | 5,350   |
| 264                              | Milo          | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2,330 | 5,050 | 5,050  | 5,050   |
| 281                              | Winter wheat  | Fall plowed    |        |       |       |       |       |       |       |       |       |       |       |       | 970   | 5,500 | 5,500  | 5,500   |
| 282                              | Oats          | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 1,600 | 5,430 | 5,430  | 5,430   |
| 285                              | Corn          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 1,040 | 5,680 | 5,680  | 5,680   |
| 287                              | Cowpeas       | do.            |        |       |       |       |       |       |       |       |       |       |       |       | 2,240 | 4,850 | 4,850  | 4,850   |
| 288                              | Fallow        | Fallowed       |        |       |       |       |       |       |       |       |       |       |       |       | 3,100 | 5,900 | 5,900  | 5,900   |
| 294                              | Milo          | Spring plowed  |        |       |       |       |       |       |       |       |       |       |       |       | 3,080 | 5,480 | 5,480  | 5,480   |
| Average                          |               |                |        |       |       |       |       |       |       |       |       |       |       |       | 600   | 5,400 | 5,400  | 5,400   |
|                                  |               |                |        |       |       |       |       |       |       |       |       |       |       |       |       | 5,337 | 5,337  | 5,337   |



## CROP YIELDS AT THE AMARILLO (TEX.) FIELD STATION—Continued

TABLE 71.—Annual acre yields of specified crops grown in rotations on individual plots at Amarillo, Tex., in one or more years from 1906 to 1919—Continued

| Crop and rotation<br>No. or plot | Previous crop | Tillage method | 1906 | 1907 | 1908 | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918  | 1919  | Total | Average |
|----------------------------------|---------------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|---------|
| <b>KAFIR TOTAL—CON.</b>          |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| E.....                           | Kafir         | Subsoiled      |      |      |      |      |      |      |      |      |      |      |      |      | 2,310 | 6,050 | 6,050 | 6,050   |
| Fb.....                          | do.           | Spring listed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,400 | 4,700 | 4,700 | 4,700   |
| Gb.....                          | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,940 | 3,800 | 3,800 | 3,800   |
| T.....                           | do.           | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 1,460 | 5,850 | 5,850 | 5,850   |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 5,100 | 5,100 | 5,100   |
| H or I.....                      | Fallow        | Fallowed       |      |      |      |      |      |      |      |      |      |      |      |      | 1,220 | 5,780 | 5,780 | 5,780   |
| J or K.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,050 | 5,580 | 5,580 | 5,580   |
| L or M.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,260 | 5,680 | 5,680 | 5,680   |
| N or O.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,000 | 6,080 | 6,080 | 6,080   |
| P or Q.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 670   | 5,000 | 5,000 | 5,000   |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 5,624 | 5,624 | 5,624   |
| <b>KAFIR GRAIN</b>               |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| Aa.....                          | Kafir         | Spring plowed  |      | 10.7 | 29.2 | 1.7  | 13.1 | 21.7 | 0    | 0    | 8.3  | 23.5 | 4.2  | 9.7  | 0     | 16.8  | 125.8 | 10.5    |
| Ba.....                          | do.           | Fall plowed    |      | 13.3 | 30.8 | 1.5  | 11.9 | 21.8 | 0    | 0    | 12.0 | 24.0 | 5.5  | 5.2  | 0     | 23.3  | 137.4 | 11.5    |
| Fa.....                          | do.           | Spring listed  |      |      |      |      |      |      | 0    | 0    | 13.3 | 18.3 | 8.5  | 6.0  | 0     | 24.3  | 70.4  | 8.8     |
| Ga.....                          | do.           | do.            |      | 11.8 | 27.2 | 5.3  | 13.5 | 8.0  | 0    | 0    | 11.7 | 23.0 | 9.5  | 5.3  | 0     | 29.0  | 130.8 | 10.9    |
| Average.....                     |               |                |      |      | 29.1 | 2.8  |      | 17.2 | 0    | 0    | 11.3 | 22.2 | 6.9  | 6.6  | 0     | 23.4  | 116.1 | 10.4    |
| Ca or Da.....                    | Fallow        | Fallowed       |      |      |      |      |      |      | 0    | 0    | 7.0  | 30.3 | 21.3 | 8.3  | 0     | 20.4  | 87.3  | 10.9    |
| 22.....                          | Winter wheat  | Fall plowed    |      | 19.8 | 36.7 | 3.5  | 12.3 | 20.5 | 0    | 0    | 8.3  | 30.3 | 21.7 | 19.0 |       |       | 159.8 | 16.0    |
| 93.....                          | do.           | do.            |      | 13.5 | 40.0 | 5.5  | 14.2 | 17.3 | 0    | 0    | 5.5  | 29.8 | 21.3 | 15.5 |       |       | 148.4 | 14.9    |
| Average.....                     |               |                |      |      | 38.4 | 4.5  |      | 18.9 | 0    | 0    | 6.9  | 30.1 | 21.5 | 17.3 |       |       | 154.1 | 15.5    |
| Ab.....                          | Kafir         | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 34.2  | 34.2  | 34.2    |
| Bb.....                          | do.           | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.3  | 31.3  | 31.3    |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 32.8  | 32.8  | 32.8    |
| Cb or Db.....                    | Fallow        | Fallowed       |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 37.5  | 37.5  | 37.5    |
| 160.....                         | (Kafir        | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 2.7   | 32.1  | 32.1  | 32.1    |
| 161.....                         | Cowpeas       | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 4.3   | 33.3  | 33.3  | 33.3    |
| 162.....                         | Milo          | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 18.5  | 18.5  | 18.5    |
| 163.....                         | do.           | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1.5   | 30.8  | 30.8  | 30.8    |
| 165.....                         | Cowpeas       | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 18.8  | 18.8  | 18.8    |
| 166.....                         | Milo          | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 3.8   | 40.0  | 40.0  | 40.0    |
| 167.....                         | Winter wheat  | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 2.8   | 30.8  | 30.8  | 30.8    |
| 168.....                         | Fallow        | Fallowed       |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 29.3  | 29.3  | 29.3    |
| 169.....                         | Cowpeas       | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 32.7  | 32.7  | 32.7    |
| 170.....                         | Milo          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.5  | 31.5  | 31.5    |
| 204.....                         | Winter wheat  | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.5  | 31.5  | 31.5    |
| 281.....                         | Oats          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1.5   | 34.6  | 34.6  | 34.6    |
| 282.....                         | Corn          | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 37.1  | 37.1  | 37.1    |
| 285.....                         | Cowpeas       | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 2.8   | 30.7  | 30.7  | 30.7    |
| 287.....                         | Fallow        | Fallowed       |      |      |      |      |      |      |      |      |      |      |      |      | 5.0   | 35.8  | 35.8  | 35.8    |
| 288.....                         | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 5.0   | 37.5  | 37.5  | 37.5    |
| 294.....                         | Milo          | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.8  | 31.8  | 31.8    |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 31.8  | 31.8  | 31.8    |
| E.....                           | Kafir         | Subsoiled      |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 35.7  | 35.7  | 35.7    |
| Fb.....                          | do.           | Spring listed  |      |      |      |      |      |      |      |      |      |      |      |      | 3.2   | 28.3  | 28.3  | 28.3    |
| Gb.....                          | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 7.8   | 23.8  | 23.8  | 23.8    |
| T.....                           | do.           | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 36.0  | 36.0  | 36.0    |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 31.0  | 31.0  | 31.0    |
| H or I.....                      | Fallow        | Fallowed       |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 37.3  | 37.3  | 37.3    |
| J or K.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 36.8  | 36.8  | 36.8    |
| L or M.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 35.4  | 35.4  | 35.4    |
| N or O.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.0  | 31.0  | 31.0    |
| P or Q.....                      | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 31.3  | 31.3  | 31.3    |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 34.4  | 34.4  | 34.4    |
| <b>PINTO BEANS</b>               |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| 300.....                         | Milo          | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 0     | 6.0   | 6.0   | 6.0     |
| <b>COWPEA HAY</b>                |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| 87.....                          | Sudan grass   | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 990   | 1,460 | 1,460 | 1,460   |
| 157.....                         | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 800   | 1,820 | 1,820 | 1,820   |
| 158.....                         | Milo          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 790   | 1,100 | 1,100 | 1,100   |
| 159.....                         | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,300 | 1,340 | 1,340 | 1,340   |
| 160.....                         | Kafir         | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,090 | 1,600 | 1,600 | 1,600   |
| 161.....                         | do.           | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 2,390 | 1,900 | 1,900 | 1,900   |
| 162.....                         | do.           | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,020 | 1,200 | 1,200 | 1,200   |
| 163.....                         | Milo          | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 1,970 | 1,700 | 1,700 | 1,700   |
| 164.....                         | Winter wheat  | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,670 | 1,300 | 1,300 | 1,300   |
| 166.....                         | Milo          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,940 | 2,180 | 2,180 | 2,180   |
| 167.....                         | Kafir         | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 2,240 | 1,720 | 1,720 | 1,720   |
| 169.....                         | Milo          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,000 | 1,540 | 1,540 | 1,540   |
| 170.....                         | Kafir         | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,250 | 1,820 | 1,820 | 1,820   |
| 265.....                         | Winter wheat  | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 870   | 1,740 | 1,740 | 1,740   |
| 278.....                         | Corn          | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,670 | 1,400 | 1,400 | 1,400   |
| 279.....                         | Oats          | Fall plowed    |      |      |      |      |      |      |      |      |      |      |      |      | 1,060 | 1,040 | 1,040 | 1,040   |
| 285.....                         | Kafir         | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,070 | 1,680 | 1,680 | 1,680   |
| 295.....                         | Milo          | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,100 | 1,860 | 1,860 | 1,860   |
| 301.....                         | do.           | do.            |      |      |      |      |      |      |      |      |      |      |      |      | 1,020 | 2,000 | 2,000 | 2,000   |
| Average.....                     |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       | 1,328 | 1,600 | 1,600   |
| <b>SUDAN GRASS</b>               |               |                |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |         |
| 87.....                          | Winter rye    | Spring plowed  |      |      |      |      |      |      |      |      |      |      |      |      | 1,170 | 9,420 | 9,420 | 9,420   |



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION

TABLE 72.—Annual acre yields of specified crops grown in rotations on individual plots at Lawton, Okla., in one or more years from 1916 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1916 to 1924, see Figure 44 (p. 68), Miscellaneous Circular No. 81. Yields of total weight of corn, alfalfa, sweetclover, sorgo, kafir, cowpea hay, Sudan grass, broomcorn brush, peanut hay, peanuts, and cotton lint are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot | Previous crop    | Tillage method    | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|------------------|-------------------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>WINTER WHEAT</b>           |                  |                   |      |      |      |      |      |      |      |      |      |      |      |       |         |
| A                             | Winter wheat     | Late fall plowed  | 6.8  | 5.8  | 0    | 24.3 | 26.3 | 12.7 | 1.5  |      |      |      |      | 70.6  | 11.8    |
| B                             | do               | Early fall plowed | 5.8  | 11.2 | 2.7  | 23.7 | 23.9 | 12.3 | 2.7  |      |      |      |      | 76.5  | 12.8    |
| E                             | do               | Subsoiled         | 4.7  | 13.3 | 3.3  | 25.7 | 26.2 | 12.5 | 1.7  |      |      |      |      | 82.7  | 13.8    |
| F                             | do               | Fall listed       | 6.3  | 14.7 | 2.2  | 24.2 | 21.5 | 14.8 | 2.5  |      |      |      |      | 79.9  | 13.3    |
| G                             | do               | do                | 5.7  | 15.0 | 2.2  | 23.8 | 21.2 | 14.7 | 2.5  |      |      |      |      | 79.4  | 13.2    |
| U                             | do               | do                | 5.0  | 20.6 | 0    | 17.2 | 26.7 | 11.5 | 0    |      |      |      |      | 76.0  | 12.7    |
| Average                       |                  |                   |      | 13.4 | 1.7  | 23.2 | 24.3 | 13.1 | 1.8  |      |      |      |      | 77.5  | 12.9    |
| <b>C or D</b>                 |                  |                   |      |      |      |      |      |      |      |      |      |      |      |       |         |
|                               | Fallow           | Fallowed          | 5.2  | 15.8 | 5.0  | 26.2 | 26.2 | 12.5 | 1.7  |      |      |      |      | 87.4  | 14.6    |
| 133a                          | Sorgo            | Disked            | 10.5 | 3.8  | 0    | 28.5 |      |      |      |      |      |      |      | 32.3  | 10.8    |
| 133b                          | Sweetclover      | Fall plowed       |      |      |      |      | 32.5 | 13.7 |      |      |      |      |      | 46.2  | 23.1    |
| 134a                          | do               | Green manured     | 16.3 | 10.2 | 1.3  | 18.8 |      |      |      |      |      |      |      | 30.3  | 10.1    |
| 134b                          | Cowpeas          | Fall plowed       |      |      |      |      | 25.8 | 15.0 |      |      |      |      |      | 40.8  | 20.4    |
| 142                           | Corn             | Disked            | 15.2 | 13.3 | 2.0  | 27.3 | 28.2 | 17.8 |      |      |      |      |      | 88.6  | 17.7    |
| 164                           | Cowpeas          | do                |      |      |      | 30.8 | 24.7 | 14.2 |      |      |      |      |      | 69.7  | 23.2    |
| 164                           | Winter wheat     | Fall planted      |      |      | 0    | 31.7 | 21.7 | 15.2 |      |      |      |      |      | 68.6  | 22.9    |
| 166                           | Cowpeas          | Disked            |      |      |      | 31.7 | 21.2 | 12.3 |      |      |      |      |      | 65.2  | 21.7    |
| 167                           | do               | do                |      |      |      | 30.8 | 22.2 | 11.0 |      |      |      |      |      | 64.0  | 21.3    |
| 195                           | Cotton           | Stubble in        |      |      |      |      | 15.5 | 12.0 |      | 17.0 | 33.2 | 3.0  | 21.3 | 102.0 | 17.0    |
| 196                           | do               | do                |      |      |      |      | 22.5 | 16.0 |      |      |      |      |      | 38.5  | 19.3    |
| 197a                          | Kafir            | Disked            |      |      |      |      | 18.8 | 11.5 |      | 14.8 |      |      |      | 45.1  | 15.0    |
| 197b                          | Cotton           | Stubble in        |      |      |      |      |      |      |      | 14.7 | 31.2 | 4.5  | 28.3 | 78.7  | 19.7    |
| 198                           | Winter wheat     | Fall plowed       |      |      |      |      |      |      |      |      | 34.5 | 4.5  | 29.3 | 68.3  | 22.8    |
| 199                           | Cotton           | Stubble in        |      |      |      |      |      |      |      | 15.2 | 31.0 | 3.5  | 23.5 | 58.0  | 19.3    |
| 200                           | Cowpeas          | Green manured     |      |      |      |      |      |      |      | 20.0 | 44.3 | 9.3  | 31.5 | 85.1  | 28.4    |
| 202                           | do               | Disked            |      |      |      |      |      |      |      | 19.5 | 40.3 | 8.8  | 25.5 | 94.1  | 23.5    |
| 203                           | Cotton           | Stubble in        |      |      |      |      |      |      |      | 17.3 | 33.2 | 3.3  | 22.3 | 76.1  | 19.0    |
| 204                           | Cowpeas          | Disked            |      |      |      |      |      |      |      | 17.5 | 40.0 | 9.8  | 27.5 | 77.3  | 25.8    |
| 204                           | Cotton           | Stubble in        |      |      |      |      |      |      |      | 18.3 | 33.2 | 6.5  | 20.7 | 78.7  | 19.7    |
| 249                           | Winter wheat     | Fall plowed       |      |      |      |      |      |      |      | 18.7 | 35.2 | 3.7  | 28.0 | 66.9  | 22.3    |
| 250                           | Corn             | Disked            | 7.0  | 16.0 | 2.4  | 25.8 | 24.0 | 13.8 | 1.0  |      |      |      |      | 83.0  | 13.8    |
| 251                           | do               | do                | 6.5  | 14.7 | 2.7  | 26.3 | 20.0 | 12.8 | 1.0  |      |      |      |      | 77.5  | 12.9    |
| 252                           | do               | do                | 6.0  | 14.5 | 3.0  | 27.2 | 29.2 | 13.2 | 1.0  |      |      |      |      | 88.1  | 14.7    |
| 253                           | do               | do                | 3.8  | 14.8 | 3.5  | 24.0 | 28.7 | 15.3 | 2.0  |      |      |      |      | 88.3  | 14.7    |
| 254                           | do               | do                | 6.0  | 16.5 | 1.5  | 11.5 | 31.0 | 17.2 | 1.7  |      |      |      |      | 79.4  | 13.2    |
| 260a                          | do               | do                | 5.7  | 14.2 | 3.5  | 23.8 | 28.5 | 13.2 | 2.5  |      |      |      |      | 85.7  | 14.3    |
| 260a                          | Corn and cowpeas | do                |      |      |      |      | 16.0 | 12.8 | 4.5  | 18.7 |      |      |      | 52.0  | 13.0    |
| 260b                          | Cotton           | Stubble in        |      |      |      |      |      |      |      |      | 34.8 | 3.3  | 22.0 | 60.1  | 20.0    |
| 261                           | Oats             | Fall plowed       |      |      |      |      | 17.0 | 16.5 | 4.3  | 17.3 | 42.0 | 2.0  | 27.7 | 126.8 | 18.1    |
| 262a                          | Corn             | Disked            |      |      |      |      | 14.3 | 15.2 | 3.0  | 20.0 |      |      |      | 52.5  | 13.1    |
| 262b                          | Oats             | Fall plowed       |      |      |      |      |      |      |      |      | 37.0 | 2.5  | 27.5 | 67.0  | 22.3    |
| 264a                          | Kafir            | Disked            |      |      |      |      | 12.2 | 12.8 | 3.3  | 22.8 |      |      |      | 51.1  | 12.8    |
| 264b                          | Spring barley    | Fall plowed       |      |      |      |      |      |      |      |      | 38.3 | 3.5  | 22.2 | 64.0  | 21.3    |
| 265                           | Cowpeas          | Disked            |      |      |      |      | 13.8 | 12.8 | 6.3  | 19.2 | 42.8 | 8.2  | 26.3 | 129.4 | 18.5    |
| 266                           | do               | Green manured     |      |      |      |      | 17.0 | 13.2 | 2.8  | 24.3 | 44.2 | 8.8  | 24.8 | 135.1 | 19.3    |
| 267                           | Fallow           | Fallowed          |      |      |      |      | 20.5 | 15.0 | 4.8  | 22.0 | 42.0 | 12.0 | 27.0 | 143.3 | 20.5    |
| 268                           | do               | do                |      |      |      |      | 18.8 | 18.3 | 3.7  | 30.7 | 46.0 | 13.2 | 28.0 | 158.7 | 22.7    |
| 269                           | do               | do                |      |      |      |      | 13.5 | 16.8 | 4.3  | 33.7 | 45.0 | 15.0 | 25.8 | 154.1 | 22.0    |
| 274                           | Fallow           | do                | 14.8 | 17.3 | 6.2  | 29.2 | 26.5 | 19.3 |      |      |      |      |      | 98.5  | 19.7    |
| 275                           | do               | do                | 19.3 | 23.0 | 9.2  | 25.7 | 21.3 | 12.3 |      |      |      |      |      | 91.5  | 18.3    |
| 364                           | Cowpeas          | Disked            |      |      |      |      | 14.0 | 15.3 | 6.5  | 20.8 | 40.5 | 9.5  | 26.7 | 133.3 | 19.1    |
| 392                           | Cotton           | Stubble in        |      |      |      |      |      |      |      | 19.5 | 33.3 | 4.2  | 20.2 | 77.2  | 19.3    |
| Average                       |                  |                   |      | 14.4 | 3.2  | 26.2 | 21.4 | 14.4 | 3.3  | 20.6 | 38.2 | 6.6  | 25.5 | 80.7  | 18.8    |
| <b>SL-1</b>                   |                  |                   |      |      |      |      |      |      |      |      |      |      |      |       |         |
| SL-1                          | Winter wheat     | Late fall plowed  |      |      |      |      |      |      |      | 21.5 | 40.3 | 3.3  | 23.2 | 66.8  | 22.3    |
| SL-2                          | do               | Early fall plowed |      |      |      |      |      |      |      | 20.0 | 38.8 | 2.8  | 26.0 | 67.6  | 22.5    |
| SL-3                          | do               | do                |      |      |      |      |      |      |      | 19.8 | 37.7 | 3.5  | 27.8 | 69.0  | 23.0    |
| SL-4                          | do               | Subsoiled         |      |      |      |      |      |      |      | 22.2 | 33.2 | 3.3  | 27.5 | 64.0  | 21.3    |
| SL-5                          | do               | (1)               |      |      |      |      |      |      |      | 25.7 | 39.5 | 2.5  | 31.3 | 73.3  | 24.4    |
| SL-6                          | do               | (1)               |      |      |      |      |      |      |      | 22.2 | 40.2 | 4.3  | 26.3 | 70.8  | 23.6    |
| SL-7                          | do               | Disked            |      |      |      |      |      |      |      | 25.7 | 34.2 | 3.8  | 19.5 | 57.5  | 19.2    |
| SL-8                          | do               | do                |      |      |      |      |      |      |      | 25.2 | 34.3 | 5.7  | 22.8 | 62.8  | 20.9    |
| SL-9                          | do               | Fall listed       |      |      |      |      |      |      |      | 32.3 | 43.0 | 5.5  | 25.0 | 73.5  | 24.5    |
| SL-10                         | do               | do                |      |      |      |      |      |      |      | 30.5 | 46.0 | 4.0  | 27.7 | 77.7  | 25.9    |
| Average                       |                  |                   |      |      |      |      |      |      |      |      | 38.7 | 3.9  | 25.7 | 68.3  | 22.8    |
| <b>SPRING WHEAT</b>           |                  |                   |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 1                             | Corn             | Disked            | 9.0  | 7.5  |      |      |      |      |      |      |      |      |      | 7.5   | 7.5     |
| 2                             | do               | Spring plowed     | 8.3  | 7.0  |      |      |      |      |      |      |      |      |      | 7.0   | 7.0     |
| 3                             | do               | Fall plowed       | 8.0  | 6.5  |      |      |      |      |      |      |      |      |      | 6.5   | 6.5     |
| 4                             | Oats             | do                | 7.5  | 5.5  |      |      |      |      |      |      |      |      |      | 5.5   | 5.5     |
| 5                             | Fallow           | Fallowed          | 2.7  | 4.5  |      |      |      |      |      |      |      |      |      | 4.5   | 4.5     |
| 8                             | Oats             | Fall plowed       | 2.0  | 5.8  |      |      |      |      |      |      |      |      |      | 5.8   | 5.8     |
| 9                             | do               | Spring plowed     | 4.8  | 6.3  |      |      |      |      |      |      |      |      |      | 6.3   | 6.3     |
| Average                       |                  |                   |      | 6.2  |      |      |      |      |      |      |      |      |      | 6.2   | 6.2     |
| <b>OATS</b>                   |                  |                   |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 1                             | Wheat            | Fall plowed       | 41.9 | 18.8 |      |      |      |      |      |      |      |      |      | 18.8  | 18.8    |
| 2                             | do               | Spring plowed     | 50.9 | 18.8 |      |      |      |      |      |      |      |      |      | 18.8  | 18.8    |
| 3                             | do               | Fall plowed       | 43.4 | 21.4 |      |      |      |      |      |      |      |      |      | 21.4  | 21.4    |
| 4                             | Corn             | Disked            | 33.1 | 17.2 |      |      |      |      |      |      |      |      |      | 17.2  | 17.2    |
| 5                             | Wheat            | Fall plowed       | 41.6 | 20.6 |      |      |      |      |      |      |      |      |      | 20.6  | 20.6    |
| 6                             | Barley           | do                | 36.9 | 14.4 |      |      |      |      |      |      |      |      |      | 14.4  | 14.4    |
| 7                             | Corn             | Spring plowed     | 44.7 | 33.8 |      |      |      |      |      |      |      |      |      | 33.8  | 33.8    |
| 8                             | Fallow           | Fallowed          | 43.4 | 24.4 |      |      |      |      |      |      |      |      |      | 24.4  | 24.4    |
| 9                             | Corn             | Spring plowed     | 38.1 | 21.6 |      |      |      |      |      |      |      |      |      | 21.6  | 21.6    |
| 133                           | Sweetclover      | Green manured     | 47.2 | 6.3  | 0    |      |      |      |      |      |      |      |      | 6.3   | 3.2     |
| 134                           | Sorgo            | Disked            | 46.9 | 5.3  | 0    |      |      |      |      |      |      |      |      | 5.3   | 2.7     |
| 142                           | Alfalfa          | Fall plowed       | 41.9 | 6.6  | 0    | 15.6 | 62.8 | 37.2 | 54.7 | 44.7 | 34.1 | 17.8 | 45.9 | 319.4 | 31.9    |
| 198                           | Cotton           | Disked            |      |      | 0    | 69.4 | 48.8 | 21.3 | 37.5 |      |      |      |      | 107.6 | 35.9    |
| 261                           | Winter wheat     | Fall plowed       |      |      |      | 62.5 | 53.1 | 33.4 | 32.8 | 55.0 | 52.5 | 22.2 | 29.1 | 278.1 | 39.7    |

1 For tillage method, see page 43.



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION—Continued

TABLE 72.—Annual acre yields of specified crops grown in rotation on individual plots at Lawton, Okla., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop                   | Tillage method | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>OATS—continued</b>         |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 262                           | Winter wheat                    | Disked         |       |       |       |       |       |       |       | 37.2  | 53.8  | 21.9  | 33.4  | 146.3  | 36.6    |
| 276                           | Cotton                          | Fall plowed    | 10.3  | 5.0   | 0     | 12.2  | 79.7  | 47.5  | 42.2  | 49.1  | 85.6  | 19.1  | 52.2  | 392.6  | 39.3    |
| 281                           | Kafir                           | Disked         |       |       |       | 73.4  | 48.4  | 27.8  | 45.3  |       |       |       |       | 121.5  | 40.5    |
| 391                           | Cotton                          | do             |       |       |       | 71.3  | 62.5  | 36.3  | 44.7  | 41.9  | 68.8  | 23.1  | 52.5  | 329.8  | 47.1    |
| Average                       |                                 |                |       | 16.5  | 0     | 13.9  | 59.2  | 23.9  | 42.9  | 45.6  | 59.0  | 20.8  | 42.6  | 105.4  | 26.0    |
| <b>CORN TOTAL</b>             |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Corn                            | Spring plowed  | 2,430 | 2,050 | 1,700 | 6,900 | 3,910 | 5,320 | 2,440 | 2,730 | 2,400 | 650   | 1,830 | 29,930 | 2,993   |
| B                             | do                              | Fall plowed    | 2,309 | 2,300 | 1,750 | 6,560 | 4,260 | 4,870 | 2,330 | 2,930 | 2,500 | 800   | 1,620 | 30,060 | 3,006   |
| E                             | do                              | Subsoiled      | 3,550 | 2,650 | 3,400 | 7,540 | 4,960 | 6,630 | 3,150 | 3,330 | 3,460 | 1,050 | 2,410 | 38,580 | 3,858   |
| F                             | do                              | Spring listed  | 3,650 | 2,000 | 2,100 | 5,500 | 4,250 | 4,600 | 2,570 | 2,030 | 2,800 | 800   | 1,960 | 28,610 | 2,861   |
| G                             | do                              | do             | 3,780 | 2,350 | 2,300 | 4,800 | 4,270 | 5,120 | 2,900 | 2,810 | 2,940 | 700   | 2,240 | 30,430 | 3,043   |
| V                             | do                              | Spring plowed  | 4,190 | 2,950 | 2,350 | 8,350 | 5,720 | 8,090 | 4,700 | 2,390 | 3,520 | 1,350 | 2,170 | 41,590 | 4,159   |
| Average                       |                                 |                |       | 2,383 | 2,267 | 6,608 | 4,562 | 5,772 | 3,023 | 2,703 | 2,952 | 892   | 2,038 | 33,200 | 3,320   |
| <b>C or D</b>                 |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow                          | Fallow         | 2,850 | 2,450 | 1,750 | 7,410 | 4,170 | 7,050 | 2,980 | 3,820 | 3,180 | 1,250 | 2,740 | 36,800 | 3,680   |
| 1                             | Oats                            | Fall plowed    | 1,430 | 1,900 |       |       |       |       |       |       |       |       |       | 1,900  | 1,900   |
| 2                             | do                              | Spring plowed  | 1,590 | 1,700 |       |       |       |       |       |       |       |       |       | 1,700  | 1,700   |
| 3                             | do                              | Fall plowed    | 910   | 1,550 |       |       |       |       |       |       |       |       |       | 1,550  | 1,550   |
| 4                             | Wheat                           | do             | 430   | 1,600 |       |       |       |       |       |       |       |       |       | 1,600  | 1,600   |
| 6                             | Oats                            | do             | 450   | 1,900 |       |       |       |       |       |       |       |       |       | 1,900  | 1,900   |
| 7                             | Barley                          | Spring plowed  | 1,600 | 1,500 |       |       |       |       |       |       |       |       |       | 1,500  | 1,500   |
| 9                             | Wheat                           | do             | 350   | 2,100 |       |       |       |       |       |       |       |       |       | 2,100  | 2,100   |
| 142                           | Oats                            | do             | 1,860 | 2,000 | 1,550 | 5,000 | 4,550 | 5,510 | 2,710 | 2,340 | 2,750 | 750   | 1,400 | 28,560 | 2,856   |
| 249                           | Winter wheat and milo           | do             | 550   | 1,400 | 900   | 4,350 | 3,750 | 4,550 | 2,300 |       |       |       |       | 17,250 | 2,875   |
| 250                           | Winter wheat and cowpeas        | do             | 700   | 1,100 | 920   | 4,500 | 3,950 | 4,790 | 1,850 |       |       |       |       | 17,110 | 2,852   |
| 251                           | Winter wheat and winter rye     | do             | 900   | 1,150 | 880   | 4,100 | 3,500 | 4,260 | 2,080 |       |       |       |       | 15,970 | 2,662   |
| 252                           | Winter wheat                    | do             | 900   | 1,250 | 1,300 | 4,350 | 4,400 | 4,530 | 2,340 |       |       |       |       | 18,170 | 3,028   |
| 253                           | do                              | do             | 1,100 | 2,750 | 2,030 | 4,950 | 5,450 | 6,540 | 2,630 |       |       |       |       | 24,350 | 4,058   |
| 254                           | Winter wheat and crimson clover | do             | 1,100 | 2,300 | 1,820 | 4,150 | 4,450 | 5,600 | 2,300 |       |       |       |       | 20,620 | 3,437   |
| 262                           | Winter wheat                    | Fall plowed    |       |       |       | 6,950 | 4,250 | 4,350 | 1,680 |       |       |       |       | 10,280 | 3,427   |
| 274                           | Sorgo                           | do             |       |       |       |       |       |       | 1,700 | 3,190 | 2,540 | 350   | 2,050 | 8,130  | 2,033   |
| 282                           | Kafir                           | Spring plowed  |       |       |       | 5,500 | 3,920 | 4,520 | 2,550 |       |       |       |       | 10,990 | 3,663   |
| 392                           | Cotton                          | do             |       |       |       | 5,850 | 3,690 | 5,750 | 2,360 |       |       |       |       | 11,800 | 3,933   |
| Average                       |                                 |                |       | 1,729 | 1,343 | 4,486 | 4,191 | 5,040 | 2,280 | 2,765 | 2,645 | 550   | 1,725 | 10,860 | 2,615   |
| 260                           | Winter wheat                    | Fall plowed    |       |       |       | 3,750 | 2,300 | 2,810 | 900   |       |       |       |       | 6,010  | 2,003   |
| <b>CORN GRAIN</b>             |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Corn                            | Spring plowed  | 13.6  | 0     | 0     | 42.7  | 21.5  | 32.2  | 11.3  | 11.1  | 14.7  | 0     | 7.1   | 140.6  | 14.1    |
| B                             | do                              | Fall plowed    | 10.7  | 0     | 0     | 40.1  | 24.1  | 28.8  | 12.6  | 13.7  | 14.5  | 0     | 6.3   | 140.1  | 14.0    |
| E                             | do                              | Subsoiled      | 22.1  | 0     | 0     | 49.2  | 29.5  | 40.7  | 17.9  | 15.1  | 19.5  | 0     | 12.1  | 184.0  | 18.4    |
| F                             | do                              | Spring listed  | 23.6  | 0     | 0     | 39.3  | 26.0  | 31.3  | 10.3  | 7.1   | 14.7  | 0     | 10.1  | 138.8  | 13.9    |
| G                             | do                              | do             | 24.0  | 0     | 0     | 30.8  | 25.6  | 33.6  | 12.9  | 7.5   | 19.2  | 0     | 12.5  | 142.1  | 14.2    |
| V                             | do                              | Spring plowed  | 27.0  | 0     | 0     | 43.3  | 21.6  | 45.0  | 22.9  | 10.5  | 20.3  | 0     | 10.9  | 174.5  | 17.5    |
| Average                       |                                 |                |       | 0     | 0     | 35.1  | 21.2  | 30.2  | 12.6  | 10.8  | 14.7  | 0     | 8.4   | 13.1   | 15.4    |
| <b>C or D</b>                 |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow                          | Fallow         | 12.9  | 0     | 0     | 49.5  | 24.9  | 46.7  | 16.9  | 16.9  | 19.1  | 0     | 16.5  | 173.6  | 19.1    |
| 1                             | Oats                            | Fall plowed    | 4.0   | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 2                             | do                              | Spring plowed  | 7.0   | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 3                             | do                              | Fall plowed    | 2.3   | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 4                             | Wheat                           | do             | 1.1   | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 6                             | Oats                            | do             | 0     | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 7                             | Barley                          | Spring plowed  | 0     | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 9                             | Wheat                           | do             | 0     | 0     |       |       |       |       |       |       |       |       |       |        |         |
| 142                           | Oats                            | do             | 7.3   | 0     | 0     | 32.9  | 18.3  | 29.3  | 12.3  | 5.2   | 16.0  | 0     | 0     | 114.0  | 11.4    |
| 249                           | Winter wheat and milo           | do             | 0     | 0     | 0     | 31.6  | 14.3  | 28.5  | 5.0   |       |       |       |       | 79.4   | 13.2    |
| 250                           | Winter wheat and cowpeas        | do             | 0     | 0     | 0     | 32.3  | 14.7  | 27.6  | 2.7   |       |       |       |       | 77.3   | 12.9    |
| 251                           | Winter wheat and winter rye     | do             | 0     | 0     | 0     | 22.7  | 12.1  | 19.6  | 3.1   |       |       |       |       | 57.5   | 9.6     |
| 252                           | Winter wheat                    | do             | 0     | 0     | 0     | 30.0  | 18.9  | 25.4  | 7.0   |       |       |       |       | 81.3   | 13.6    |
| 253                           | do                              | do             | 0     | 0     | 0     | 30.7  | 23.6  | 38.8  | 4.7   |       |       |       |       | 97.8   | 16.3    |
| 254                           | Crimson Clover                  | do             | 0     | 0     | 0     | 27.3  | 15.6  | 30.6  | 5.0   |       |       |       |       | 78.5   | 13.1    |
| 262                           | Winter wheat                    | Fall plowed    |       |       |       | 22.1  | 19.5  | 25.7  | 1.9   |       |       |       |       | 47.1   | 15.7    |
| 274                           | Sorgo                           | do             |       |       |       |       |       |       | 0     | 14.5  | 13.2  | 0     | 0     | 27.7   | 6.9     |
| 282                           | Kafir                           | Spring plowed  |       |       |       | 26.0  | 22.9  | 25.3  | 7.1   |       |       |       |       | 55.3   | 18.4    |
| 392                           | Cotton                          | do             |       |       |       | 27.1  | 19.2  | 30.6  | 3.7   |       |       |       |       | 53.5   | 17.8    |
| Average                       |                                 |                |       | 0     | 0     | 29.6  | 17.9  | 28.1  | 5.3   | 9.9   | 14.6  | 0     | 0     | 69.9   | 13.5    |
| 260                           | Winter wheat                    | Fall plowed    |       |       |       | 22.7  | 10.1  | 18.2  | 0     |       |       |       |       | 28.3   | 9.4     |
| <b>WINTER BARLEY</b>          |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 196                           | Cowpeas                         | Disked         |       |       |       |       |       |       |       | 11.7  | 69.2  | 4.0   | 48.3  | 133.2  | 33.3    |
| <b>SPRING BARLEY</b>          |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 6                             | Corn                            | Disked         | 20.8  | 9.4   |       |       |       |       |       |       |       |       |       | 9.4    | 9.4     |
| 7                             | Oats                            | Spring plowed  | 26.3  | 11.3  |       |       |       |       |       |       |       |       |       | 11.3   | 11.3    |
| 201                           | Cowpeas                         | Disked         |       |       |       |       |       |       |       | 8.5   | 31.3  | 1.9   | 21.3  | 63.0   | 15.8    |
| 264                           | Winter wheat                    | do             |       |       |       |       |       |       |       | 13.8  | 22.9  | 5.4   | 20.6  | 62.7   | 15.7    |
| Average                       |                                 |                |       | 10.4  |       |       |       |       |       | 11.2  | 27.1  | 3.7   | 21.0  | 36.6   | 13.1    |
| <b>ALFALFA</b>                |                                 |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 142                           | Winter wheat <sup>2</sup>       | Fall plowed    | 0     | 0     | 0     | 1,000 | 0     | 0     | 0     | 950   | 1,450 | 0     | 1,750 | 5,150  | 515     |
|                               | Alfalfa                         | do             | 0     | 0     | 0     | 6,250 | 4,750 | 1,600 | 1,650 | 0     | 2,850 | 0     | 2,700 | 19,800 | 1,980   |
|                               | do                              | do             |       | 0     | 0     | 5,850 | 3,000 | 1,650 | 2,800 | 1,800 | 3,450 | 1,300 | 800   | 20,650 | 2,065   |
| Average                       |                                 |                |       | 0     | 0     | 4,367 | 2,583 | 1,083 | 1,483 | 917   | 2,583 | 433   | 1,750 | 15,200 | 1,520   |

<sup>2</sup> The first year of alfalfa followed cotton from 1923 to 1926.



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION—Continued

TABLE 72.—Annual acre yields of specified crops grown in rotations on individual plots at Lawton, Okla., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1916  | 1917   | 1918  | 1919   | 1920   | 1921  | 1922   | 1923  | 1924   | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|--------|-------|--------|--------|-------|--------|-------|--------|-------|-------|--------|---------|
| <b>SWEETCLOVER</b>            |               |                |       |        |       |        |        |       |        |       |        |       |       |        |         |
| 133 <sup>3</sup>              | Cowpeas       | Disked         |       |        |       | 3,600  | 0      | 1,900 | 0      | 0     | 3,450  | 0     | 2,600 | 7,950  | 1,136   |
|                               | Sweetclover   |                |       |        |       |        | 1,850  | 1,600 | 0      | 3,000 | 0      | 0     | 3,850 | 10,300 | 1,471   |
| 134 <sup>4</sup>              | Kafir         | Disked         |       |        |       | 3,600  | 1,850  | 2,300 | 0      | 0     | 4,300  | 0     | 1,500 | 9,950  | 1,421   |
|                               | Sweetclover   |                |       |        |       |        | 2,950  | 2,550 | 0      | 0     | 0      | 0     | 2,050 | 7,550  | 1,079   |
| Average                       |               |                |       |        |       |        | 1,663  | 2,088 | 0      | 750   | 1,938  | 0     | 2,500 | 8,938  | 1,277   |
| <b>SORGO TOTAL</b>            |               |                |       |        |       |        |        |       |        |       |        |       |       |        |         |
| A                             | Sorgo         | Spring plowed  | 1,300 | 9,070  | 1,150 | 10,750 | 11,500 | 6,050 | 0      | 4,650 | 8,200  | 1,700 | 6,650 | 59,720 | 5,972   |
| B                             | do            | Fall plowed    | 1,050 | 9,560  | 900   | 10,400 | 11,450 | 7,400 | 0      | 4,800 | 7,900  | 1,900 | 6,650 | 60,960 | 6,096   |
| E                             | do            | Subsoiled      | 1,500 | 8,970  | 730   | 10,750 | 12,500 | 7,400 | 5,330  | 4,000 | 8,300  | 2,700 | 6,950 | 67,630 | 6,763   |
| F                             | do            | Spring listed  | 700   | 6,350  | 1,550 | 7,950  | 9,650  | 3,300 | 5,800  | 3,350 | 6,150  | 3,450 | 7,300 | 54,850 | 5,485   |
| G                             | do            | do             | 1,000 | 9,770  | 1,050 | 10,100 | 11,300 | 6,650 | 5,850  | 4,250 | 6,150  | 3,150 | 7,400 | 65,670 | 6,567   |
| V                             | do            | Spring plowed  | 5,900 | 12,250 | 1,050 | 12,350 | 18,450 | 9,350 | 12,060 | 5,000 | 11,500 | 4,900 | 7,750 | 94,660 | 9,466   |
| Average                       |               |                |       | 9,328  | 1,072 | 10,383 | 12,475 | 6,692 | 4,840  | 4,342 | 8,033  | 2,967 | 7,117 | 67,248 | 6,725   |
| C or D                        | Fallow        | Fallowed       | 1,150 | 9,670  | 5,200 | 11,950 | 10,400 | 7,300 | 0      | 4,600 | 8,900  | 4,400 | 7,700 | 70,120 | 7,012   |
| 199                           | Cotton        | Fall plowed    |       |        |       | 12,100 | 20,700 | 8,300 | 3,000  |       |        |       |       | 32,000 | 10,667  |
| 133                           | Oats          | Spring plowed  | 4,250 | 2,600  | 0     |        |        |       |        |       |        |       |       | 2,900  | 1,450   |
| 134                           | Winter wheat  | do             | 5,100 | 4,800  | 0     |        |        |       |        |       |        |       |       | 4,800  | 2,400   |
| 274                           | Kafir         | Fall plowed    |       |        |       |        |        |       | 4,000  | 3,750 | 7,900  | 2,780 |       |        |         |
| 275                           | do            | do             |       |        |       |        |        |       | 5,800  | 4,450 | 9,900  | 2,800 |       | 13,250 | 6,163   |
| <b>MILO GRAIN</b>             |               |                |       |        |       |        |        |       |        |       |        |       |       |        |         |
| A                             | Milo          | Spring plowed  | 0     | 10.9   | 0     | 46.6   | 31.2   | 0     | 0      | 0     |        |       |       | 88.7   | 12.7    |
| B                             | do            | Fall plowed    | 0     | 8.8    | 0     | 50.5   | 35.9   | 0     | 0      | 0     |        |       |       | 95.2   | 13.6    |
| E                             | do            | Subsoiled      | 0     | 12.6   | 0     | 48.6   | 28.3   | 0     | 0      | 0     |        |       |       | 89.5   | 12.8    |
| F                             | do            | Spring listed  | 0     | 12.1   | 0     | 35.5   | 10.2   | 0     | 0      | 0     |        |       |       | 57.8   | 8.3     |
| G                             | do            | do             | 0     | 12.6   | 0     | 34.3   | 23.3   | 0     | 0      | 0     |        |       |       | 70.2   | 10.0    |
| V                             | do            | Spring plowed  | 0     | 9.7    | 0     | 48.6   | 27.1   | 26.6  | 0      | 0     |        |       |       | 112.0  | 16.0    |
| Average                       |               |                |       | 11.1   | 0     | 44.0   | 25.0   | 4.4   | 0      | 0     |        |       |       | 85.6   | 12.2    |
| C or D                        | Fallow        | Fallowed       | 0     | 13.6   | 0     | 55.3   | 30.9   | 0     | 0      | 0     |        |       |       | 99.8   | 14.3    |
| 161                           | Cowpeas       | Fall plowed    |       |        | 0     | 42.8   | 20.7   | 0     | 0      | 0     |        |       |       | 63.5   | 12.7    |
| 162                           | do            | Spring plowed  |       |        | 0     | 36.2   | 15.9   | 0     | 0      | 0     |        |       |       | 52.1   | 10.4    |
| 163                           | Kafir         | Fall plowed    |       |        | 0     | 43.8   | 13.4   | 0     | 0      | 0     |        |       |       | 57.2   | 11.4    |
| 165                           | Fallow        | Fallowed       |       |        | 0     | 34.1   | 1.9    | 0     | 0      | 0     |        |       |       | 36.0   | 7.2     |
| 166                           | Winter wheat  | Spring plowed  |       |        | 0     | 32.4   | 14.0   | 0     | 0      | 0     |        |       |       | 46.4   | 9.3     |
| 168                           | Kafir         | Fall plowed    |       |        | 0     | 51.0   | 27.9   | 0     | 0      | 0     |        |       |       | 78.9   | 15.8    |
| 169                           | do            | Spring plowed  |       |        | 0     | 33.4   | 23.9   | 0     | 0      | 0     |        |       |       | 57.3   | 11.5    |
| 205                           | Cowpeas       | Green manured  | 0     | 1.0    | 0     | 50.5   | 42.1   | 0     | 0      | 0     |        |       |       | 93.6   | 13.4    |
| 249                           | Winter wheat  | Spring listed  | 0     | 2.9    | 0     | 0      | 11.7   | 0     | 0      | 0     |        |       |       | 14.6   | 2.4     |
| Average                       |               |                |       | 2.0    | 0     | 36.0   | 19.1   | 0     | 0      | 0     |        |       |       | 55.5   | 10.5    |
| <b>KAFIR TOTAL</b>            |               |                |       |        |       |        |        |       |        |       |        |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 1,820 | 5,740  | 1,350 | 5,400  | 6,350  | 3,950 | 3,250  | 2,800 | 6,150  | 1,400 | 3,950 | 40,340 | 4,034   |
| B                             | do            | Fall plowed    | 1,850 | 6,000  | 1,150 | 6,300  | 6,550  | 5,500 | 3,800  | 3,360 | 7,250  | 2,450 | 3,900 | 46,260 | 4,626   |
| E                             | do            | Subsoiled      | 1,750 | 5,890  | 1,150 | 6,600  | 7,050  | 5,200 | 3,700  | 2,850 | 7,400  | 2,450 | 4,100 | 46,390 | 4,639   |
| F                             | do            | Spring listed  | 3,370 | 2,350  | 800   | 3,400  | 5,900  |       |        |       |        |       |       | 12,450 | 3,113   |
| Ga                            | do            | do             |       |        |       |        |        | 3,400 | 2,500  | 3,000 | 5,700  | 3,550 | 3,400 | 21,550 | 3,592   |
| Gb                            | do            | do             | 3,750 | 4,210  | 1,350 | 4,200  | 4,850  | 3,600 | 3,500  | 3,400 | 5,500  | 2,900 | 3,500 | 37,010 | 3,701   |
| V                             | do            | Spring plowed  | 6,530 | 5,610  | 1,900 | 5,000  | 6,440  | 6,100 | 4,200  | 3,250 | 7,000  | 4,050 | 4,850 | 48,460 | 4,840   |
| Average                       |               |                |       | 4,967  | 1,283 | 5,150  | 6,190  | 4,625 | 3,492  | 3,110 | 6,500  | 2,800 | 3,950 | 3,606  | 4,078   |
| C or D                        | Fallow        | Fallowed       | 2,650 | 6,430  | 3,200 | 6,600  | 7,350  | 5,350 | 3,900  | 3,500 | 7,100  | 4,200 | 4,850 | 52,480 | 5,248   |
| LM-R                          | Kafir         | Listed         | 1,250 | 4,830  | 800   | 4,450  | 4,700  | 3,630 | 0      | 2,850 | 5,200  | 3,100 | 4,160 | 33,720 | 3,372   |
| LM-S                          | do            | do             | 1,800 | 4,340  | 900   | 4,050  | 4,350  | 4,250 | 0      | 2,350 | 4,900  | 2,750 | 3,940 | 31,830 | 3,183   |
| LM-T                          | do            | do             | 1,740 | 3,520  | 750   | 4,250  | 4,500  | 3,500 | 0      | 2,550 | 4,600  | 2,850 | 3,630 | 30,150 | 3,015   |
| LM-N                          | do            | do             | 1,660 | 4,250  | 800   | 4,500  | 4,450  | 3,130 | 0      | 2,450 | 4,850  | 1,950 | 3,960 | 30,340 | 3,034   |
| LM-V                          | do            | do             | 1,850 | 4,160  | 1,050 | 5,450  | 5,650  | 3,700 | 0      | 3,150 | 5,600  | 2,000 | 3,700 | 35,260 | 3,526   |
| LM-W                          | do            | do             | 1,850 | 5,390  | 700   | 4,950  | 4,800  | 4,050 | 1,000  | 2,450 | 5,300  | 2,750 | 3,900 | 35,250 | 3,529   |
| LM-X                          | do            | do             | 1,900 | 4,970  | 1,000 | 5,350  | 5,700  | 4,130 | 500    | 2,600 | 5,200  | 2,500 | 4,000 | 35,950 | 3,595   |
| LM-Y                          | do            | do             | 2,200 | 5,590  | 700   | 4,750  | 5,350  | 5,650 | 1,250  | 3,200 | 6,150  | 3,150 | 4,200 | 39,990 | 3,999   |
| 134                           | Cotton        | Spring listed  |       |        |       |        |        |       | 0      | 2,000 | 6,600  | 1,450 | 3,550 | 13,660 | 3,400   |
| 160                           | Kafir         | Spring plowed  |       |        |       |        |        |       | 1,880  | 2,700 | 6,050  | 2,300 | 4,380 | 15,430 | 3,858   |
| 161a                          | Cowpeas       | do             |       |        |       |        |        |       | 0      | 1,950 | 6,100  | 3,400 | 3,900 | 15,350 | 3,838   |
| 161b                          | Milo          | Fall plowed    |       |        | 1,100 | 7,150  | 7,000  | 4,800 | 5,050  | 2,750 | 6,800  |       |       | 33,550 | 5,592   |
| 162a                          | Feterita      | do             |       |        |       |        |        |       |        |       |        | 3,900 | 5,100 | 9,000  | 4,500   |
| 162b                          | Milo          | Spring plowed  |       |        | 1,400 | 5,700  | 6,250  | 4,100 | 4,200  | 2,190 | 5,600  |       |       | 28,040 | 4,673   |
| 163                           | Feterita      | do             |       |        |       |        |        |       |        |       |        | 2,300 | 7,450 | 9,750  | 4,890   |
| 165a                          | Cowpeas       | Fall plowed    |       |        | 1,400 | 6,850  | 5,750  | 4,700 | 3,600  | 2,200 | 6,650  | 2,450 | 4,050 | 36,250 | 4,531   |
| 165b                          | Milo          | do             |       |        | 1,850 | 6,950  | 8,000  | 5,350 | 3,890  | 2,700 | 6,350  |       |       | 33,240 | 5,540   |
| 165b                          | Feterita      | do             |       |        |       |        |        |       |        |       |        | 2,600 | 4,930 | 7,530  | 3,765   |
| 167a                          | Winter wheat  | Spring plowed  |       |        | 1,350 | 5,300  | 5,400  | 0     | 3,400  |       |        |       |       | 14,100 | 3,525   |
| 167b                          | Cotton        | do             |       |        |       |        |        |       |        | 1,400 | 6,600  | 1,850 | 4,170 | 14,020 | 3,505   |
| 168                           | Fallow        | Fallowed       |       |        | 3,000 | 5,700  | 6,650  | 5,650 | 0      | 2,400 | 6,150  | 3,750 | 4,910 | 35,210 | 4,401   |
| 169                           | Cowpeas       | Spring plowed  |       |        | 2,050 | 5,950  | 6,700  | 4,050 | 0      | 2,050 | 6,400  | 3,300 | 3,950 | 32,400 | 4,050   |
| 195                           | Winter wheat  | Fall plowed    |       |        |       | 7,650  | 6,600  | 4,830 | 3,500  |       |        |       |       | 14,980 | 4,993   |
| 196                           | do            | do             |       |        |       | 7,200  | 6,450  | 6,130 | 3,850  |       |        |       |       | 16,450 | 5,477   |
| 197                           | Cotton        | do             |       |        |       | 7,050  | 6,700  | 5,670 | 2,390  |       |        |       |       | 14,760 | 4,920   |
| 198                           | Oats          | do             |       |        |       | 7,600  | 4,600  | 6,000 | 2,150  |       |        |       |       | 12,750 | 4,250   |
| 201                           | Cowpeas       | do             |       |        |       | 7,750  | 5,390  | 5,600 | 3,750  |       |        |       |       | 14,740 | 4,913   |
| 202                           | do            | Spring plowed  |       |        |       | 8,450  | 5,350  | 4,850 | 3,600  |       |        |       |       | 13,830 | 4,610   |
| 203                           | Cotton        | do             |       |        |       | 8,300  | 7,000  | 5,350 | 2,050  |       |        |       |       | 14,430 | 4,110   |
| 204                           | do            | Fall listed    |       |        |       | 7,400  | 5,390  | 3,550 | 2,150  |       |        |       |       | 11,090 | 3,697   |
| 235                           | Kafir         | Fall plowed    | 1,250 | 6,250  | 1,550 | 5,950  | 6,300  | 5,500 | 0      | 3,360 | 7,500  | 1,950 | 4,750 | 43,110 | 4,311   |
| 236                           | do            | do             | 3,000 | 6,480  | 1,100 | 5,550  | 5,800  | 5,850 | 0      | 2,150 | 6,850  | 1,850 | 4,550 | 40,150 | 4,015   |
| 264                           | Winter wheat  | do             |       |        |       | 8,050  | 5,150  | 5,500 | 0      |       |        |       |       | 10,650 | 3,550   |
| 274                           | Cotton        | Spring plowed  | 2,800 | 3,350  | 1,400 | 6,150  | 7,940  | 5,100 | 2,900  | 2,750 | 6,750  | 400   | 4,600 | 41,340 | 4,134   |
| 275                           | do            | do             | 3,000 | 2,850  | 1,350 | 6,350  | 7,780  | 5,750 | 3,350  | 2,950 | 7,550  | 1,250 | 4,950 | 44,130 | 4,413   |

<sup>3</sup> Sweetclover in 1919 followed oats.<sup>4</sup> The first year of sweetclover in rotation 134 followed winter wheat from 1919 to 1922, inclusive.<sup>5</sup> First cutting; a second cutting of 8,400 pounds per acre was weighed soon after harvest.<sup>6</sup> Immature; weighed soon after harvest.<sup>7</sup> First cutting; a second cutting of 12,900 pounds per acre was weighed soon after harvest.



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION—Continued

TABLE 72.—Annual acre yields of specified crops grown in rotations on individual plots at Lawton, Okla., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>KAFIR TOTAL—CON.</b>       |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 276                           | Oats          | Fall plowed    | 1,550 | 6,420 | 2,250 | 7,600 | 7,250 | 7,250 | 0     | 2,800 | 8,200 | 3,150 | 4,200 | 49,120 | 4,912   |
| 280                           | Cotton        | do             |       |       |       | 9,250 | 8,600 | 5,500 | 2,400 |       |       |       |       | 16,500 | 5,500   |
| 281                           | Oats          | do             |       |       |       | 9,500 | 7,100 | 4,900 | 2,800 |       |       |       |       | 14,800 | 4,933   |
| 282                           | Corn          | Spring plowed  |       |       |       | 9,900 | 7,050 | 4,250 | 3,250 |       |       |       |       | 14,550 | 4,850   |
| 283                           | Peanuts       | do             |       |       |       | 9,100 | 7,250 | 5,100 | 3,100 |       |       |       |       | 15,450 | 5,150   |
| 284                           | Cowpeas       | do             |       |       |       | 7,300 | 6,400 | 4,300 | 2,800 |       |       |       |       | 13,500 | 4,500   |
| 285                           | do            | do             |       |       |       | 8,350 | 6,600 | 4,150 | 0     |       |       |       |       | 10,750 | 3,583   |
| 286                           | do            | Green manured  |       |       |       | 8,300 | 6,300 | 4,050 | 0     |       |       |       |       | 10,350 | 3,450   |
| 287                           | Fallow        | do             |       |       |       | 8,200 | 6,400 | 4,850 | 0     |       |       |       |       | 11,250 | 3,750   |
| 288                           | do            | do             |       |       |       | 8,100 | 6,250 | 5,200 | 0     |       |       |       |       | 11,450 | 3,817   |
| 289                           | do            | do             |       |       |       | 8,400 | 6,300 | 5,500 |       |       |       |       |       | 11,800 | 3,933   |
| Average                       |               |                |       | 4,800 | 1,104 | 5,648 | 6,185 | 4,756 | 1,716 | 2,520 | 6,172 | 2,511 | 4,390 | 22,652 | 4,213   |
| 390                           | Cotton        | Fall plowed    |       |       |       | 3,750 | 3,800 | 3,600 | 0     |       |       |       |       | 7,400  | 2,467   |
| <b>KAFIR GRAIN</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 4.5   | 15.5  | 0     | 28.8  | 36.7  | 24.5  | 7.2   | 14.3  | 30.0  | 7.3   | 25.3  | 189.6  | 19.0    |
| B                             | do            | Fall plowed    | 6.7   | 16.3  | 0     | 32.5  | 36.8  | 31.2  | 6.8   | 19.3  | 35.0  | 12.5  | 25.7  | 216.1  | 21.6    |
| E                             | do            | Subsoiled      | 5.8   | 14.5  | 0     | 30.7  | 49.8  | 29.2  | 6.2   | 16.3  | 33.7  | 13.0  | 25.5  | 209.9  | 21.0    |
| F                             | do            | Spring listed  | 10.3  | 7.0   | 0     | 15.3  | 28.8  |       |       |       |       |       |       | 51.1   | 12.8    |
| Ga                            | do            | do             |       |       |       |       |       | 16.3  | 3.7   | 0     | 20.0  | 14.7  | 21.2  | 75.9   | 12.7    |
| Gh                            | do            | do             | 11.7  | 9.5   | 0     | 17.5  | 25.3  | 14.2  | 4.2   | 0     | 28.8  | 15.3  | 22.3  | 137.1  | 13.7    |
| V                             | do            | Spring plowed  | 17.2  | 12.3  | 0     | 7.7   | 34.0  | 8.3   | 4.2   | 13.2  | 30.7  | 15.2  | 22.2  | 148.8  | 14.9    |
| Average                       |               |                |       | 12.5  | 0     | 22.1  | 33.7  | 20.6  | 5.6   | 10.5  | 29.7  | 13.0  | 23.7  | 171.4  | 16.5    |
| C or D                        | Fallow        | Fallowed       | 8.3   | 18.7  | 0     | 34.8  | 41.0  | 30.7  | 9.5   | 21.3  | 34.8  | 19.8  | 30.5  | 241.1  | 24.1    |
| LM-R                          | Kafir         | Listed         | 0     | 12.7  | 0     | 24.7  | 28.3  | 17.9  | 0     | 7.5   | 24.7  | 14.8  | 23.3  | 153.9  | 15.4    |
| LM-S                          | do            | do             | 0     | 14.0  | 0     | 22.3  | 27.5  | 22.5  | 0     | 5.5   | 22.2  | 12.7  | 23.3  | 150.0  | 15.0    |
| LM-T                          | do            | do             | 0     | 12.2  | 0     | 24.2  | 24.3  | 17.5  | 0     | 6.2   | 20.7  | 14.7  | 21.3  | 141.1  | 14.1    |
| LM-U                          | do            | do             | 0     | 14.0  | 0     | 24.3  | 23.2  | 15.8  | 0     | 7.8   | 22.2  | 9.3   | 22.2  | 138.8  | 13.9    |
| LM-V                          | do            | do             | 0     | 16.5  | 0     | 30.5  | 32.3  | 16.8  | 0     | 10.2  | 25.2  | 14.2  | 24.3  | 170.0  | 17.0    |
| LM-W                          | do            | do             | 0     | 16.0  | 0     | 28.5  | 29.7  | 22.7  | 2.3   | 5.7   | 23.2  | 13.0  | 21.3  | 162.4  | 16.2    |
| LM-X                          | do            | do             | 0     | 16.5  | 0     | 29.8  | 26.5  | 21.7  | 2.0   | 7.0   | 24.7  | 11.8  | 22.5  | 162.5  | 16.3    |
| LM-Y                          | do            | do             | 0     | 17.8  | 0     | 25.8  | 22.5  | 30.7  | 2.7   | 11.0  | 31.0  | 15.0  | 25.8  | 182.3  | 18.2    |
| 134                           | Cotton        | Spring listed  |       |       |       |       |       |       | 0     | 0     | 30.5  | 5.7   | 12.2  | 48.4   | 12.1    |
| 160                           | Kafir         | Spring plowed  |       |       |       |       |       |       | 3.8   | 15.8  | 25.5  | 11.7  | 19.3  | 73.3   | 18.3    |
| 161a                          | Cowpeas       | do             |       |       |       |       |       |       | 0     | 5.7   | 27.7  | 15.8  | 14.3  | 63.5   | 15.9    |
| 161b                          | Milo          | Fall plowed    |       |       | 0     | 36.7  | 38.5  | 24.7  | 3.3   | 13.3  | 27.7  |       |       | 144.2  | 24.0    |
| 161h                          | Feterita      | do             |       |       |       |       |       |       |       |       |       | 11.7  | 21.8  | 33.5   | 16.8    |
| 162a                          | Milo          | Spring plowed  |       |       | 0     | 27.8  | 45.2  | 21.2  | 7.8   | 12.5  | 25.7  |       |       | 140.2  | 23.4    |
| 162b                          | Feterita      | do             |       |       |       |       |       |       |       |       |       | 10.7  | 21.8  | 32.5   | 16.3    |
| 163                           | Cowpeas       | Fall plowed    |       |       | 0     | 35.8  | 35.0  | 22.5  | 3.7   | 12.8  | 31.0  | 11.5  | 13.3  | 165.6  | 20.7    |
| 165a                          | Milo          | do             |       |       | 0     | 32.7  | 46.7  | 29.8  | 3.3   | 15.7  | 32.2  |       |       | 160.4  | 26.7    |
| 165b                          | Feterita      | do             |       |       |       |       |       |       |       |       |       | 12.7  | 27.0  | 39.7   | 19.9    |
| 167a                          | Winter wheat  | Spring plowed  |       |       | 0     | 27.8  | 33.7  | 0     | 3.7   |       |       |       |       | 65.2   | 16.3    |
| 167h                          | Cotton        | do             |       |       |       |       |       |       |       | 5.0   | 28.2  | 8.2   | 18.8  | 60.2   | 15.1    |
| 168                           | Fallow        | Fallowed       |       |       | 0     | 27.3  | 40.0  | 30.5  | 0     | 12.3  | 32.2  | 17.8  | 23.7  | 183.8  | 23.0    |
| 169                           | Cowpeas       | Spring plowed  |       |       | 0     | 29.0  | 39.7  | 21.0  | 0     | 9.3   | 30.0  | 15.3  | 17.0  | 161.3  | 20.2    |
| 195                           | Winter wheat  | Fall plowed    |       |       |       | 34.5  | 37.7  | 24.6  | 1.7   |       |       |       |       | 64.0   | 21.3    |
| 196                           | do            | do             |       |       |       | 32.5  | 38.7  | 24.6  | 1.2   |       |       |       |       | 64.5   | 21.5    |
| 197                           | Cotton        | do             |       |       |       | 36.2  | 40.0  | 26.1  | 0     |       |       |       |       | 66.1   | 22.0    |
| 198                           | Oats          | do             |       |       |       | 33.7  | 26.7  | 27.0  | 0     |       |       |       |       | 53.7   | 17.9    |
| 201                           | Cowpeas       | do             |       |       |       | 35.3  | 34.5  | 32.5  | 4.2   |       |       |       |       | 71.2   | 23.7    |
| 202                           | do            | Spring plowed  |       |       |       | 37.7  | 35.0  | 27.3  | 5.8   |       |       |       |       | 68.1   | 22.7    |
| 203                           | Cotton        | do             |       |       |       | 40.5  | 42.5  | 28.8  | 0     |       |       |       |       | 71.3   | 23.8    |
| 204                           | do            | Fall listed    |       |       |       | 32.7  | 32.4  | 19.2  | 0     |       |       |       |       | 51.6   | 17.2    |
| 255                           | Kafir         | Fall plowed    | 0     | 22.2  | 0     | 30.2  | 35.5  | 26.2  | 0     | 14.8  | 35.2  | 9.8   | 27.8  | 202.7  | 20.3    |
| 256                           | do            | do             | 0     | 19.5  | 0     | 25.8  | 34.3  | 29.3  | 0     | 0     | 28.7  | 7.7   | 16.8  | 162.1  | 16.2    |
| 264                           | Winter wheat  | do             |       |       |       | 38.0  | 33.3  | 25.3  | 0     |       |       |       |       | 58.6   | 19.5    |
| 274                           | Cotton        | Spring plowed  | 0     | 2.5   | 0     | 29.5  | 41.7  | 23.7  | 0     | 0     | 28.8  | 0     | 20.7  | 146.9  | 14.7    |
| 275                           | do            | do             | 0     | 2.0   | 0     | 31.0  | 39.3  | 21.2  | 3.5   | 0     | 36.7  | 0     | 15.3  | 149.0  | 14.9    |
| 276                           | Oats          | Fall plowed    | 0     | 16.7  | 0     | 43.2  | 36.8  | 37.0  | 0     | 15.0  | 37.3  | 10.8  | 14.2  | 211.0  | 21.1    |
| 280                           | Cotton        | do             |       |       |       | 43.0  | 45.2  | 31.2  | 0     |       |       |       |       | 76.4   | 25.5    |
| 281                           | Oats          | do             |       |       |       | 43.3  | 39.3  | 27.8  | .8    |       |       |       |       | 67.9   | 22.6    |
| 282                           | Corn          | Spring plowed  |       |       |       | 44.7  | 39.8  | 22.2  | 2.8   |       |       |       |       | 64.8   | 21.6    |
| 283                           | Peanuts       | do             |       |       |       | 43.2  | 42.0  | 26.5  | 2.3   |       |       |       |       | 70.8   | 23.6    |
| 284                           | Cowpeas       | do             |       |       |       | 39.7  | 38.2  | 22.5  | 5.7   |       |       |       |       | 66.4   | 22.1    |
| 285                           | do            | do             |       |       |       | 38.3  | 38.7  | 24.0  | 0     |       |       |       |       | 62.7   | 20.9    |
| 286                           | do            | Green manured  |       |       |       | 41.0  | 41.3  | 21.0  | 0     |       |       |       |       | 62.3   | 20.8    |
| 287                           | Fallow        | Fallowed       |       |       |       | 38.8  | 37.0  | 22.7  | 0     |       |       |       |       | 59.7   | 19.9    |
| 288                           | do            | do             |       |       |       | 40.7  | 37.2  | 26.8  | 0     |       |       |       |       | 64.0   | 21.3    |
| 289                           | do            | do             |       |       |       | 38.5  | 39.3  | 28.5  | 0     |       |       |       |       | 67.8   | 22.6    |
| Average                       |               |                |       | 14.0  | 0     | 23.3  | 35.9  | 24.1  | 1.5   | 8.4   | 28.4  | 11.1  | 20.3  | 103.0  | 19.4    |
| 390                           | Cotton        | Fall plowed    |       |       |       | 17.7  | 23.7  | 19.7  | 0     |       |       |       |       | 43.4   | 14.5    |
| <b>FETERITA GRAIN</b>         |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Feterita      | Spring plowed  | 0     | 21.4  | 0     | 28.1  | 21.4  | 5.2   | 0     | 7.6   | 25.3  | 2.9   | 18.1  | 130.0  | 13.0    |
| B                             | do            | Fall plowed    | 0     | 25.2  | 0     | 29.8  | 26.2  | 13.1  | 0     | 10.3  | 25.9  | 5.3   | 20.5  | 157.3  | 15.7    |
| Average                       |               |                |       | 23.3  | 0     | 29.0  | 23.8  | 9.2   | 0     | 9.0   | 21.1  | 4.1   | 19.3  | 143.7  | 14.4    |
| C or D                        | Fallow        | Fallowed       | 0     | 22.6  | 0     | 33.6  | 20.7  | 7.9   | 0     | 11.4  | 25.0  | 11.0  | 16.0  | 148.2  | 14.8    |
| 161                           | Cowpeas       | Fall plowed    |       |       |       |       |       |       |       |       | 23.6  | 13.6  | 12.8  | 50.0   | 16.7    |
| 162                           | do            | Spring plowed  |       |       |       |       |       |       |       |       | 22.8  | 8.3   | 12.9  | 44.0   | 14.7    |
| 163                           | Kafir         | Fall plowed    |       |       |       |       |       |       |       |       | 22.1  | 5.3   | 17.6  | 45.0   | 15.0    |
| 165                           | Fallow        | Fallowed       |       |       |       |       |       |       |       |       | 24.5  | 10.5  | 17.9  | 52.9   | 17.6    |
| 166                           | Cotton        | Spring plowed  |       |       |       |       |       |       |       |       | 23.3  | 5.9   | 9.1   | 38.3   | 12.8    |
| 168                           | Kafir         | Fall plowed    |       |       |       |       |       |       |       |       | 26.9  | 4.0   | 14.3  | 45.2   | 15.1    |
| 169                           | do            | Spring plowed  |       |       |       |       |       |       |       |       | 20.7  | 4.3   | 12.8  | 37.8   | 12.6    |
| 205                           | Cowpeas       | Green manured  |       |       |       |       |       |       |       |       | 29.8  | 6.2   | 19.1  | 55.1   | 18.4    |
| Average                       |               |                |       |       |       |       |       |       |       |       | 24.2  | 7.3   | 14.6  | 46.0   | 15.4    |



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION—Continued

TABLE 72.—Annual acre yields of specified crops grown in rotations on individual plots at Lawton, Okla., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>COWPEA HAY</b>             |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 133a                          | Winter wheat  | Fall plowed    |       |       |       | 3,100 | 2,850 | 3,200 | 2,100 |       |       |       |       | 11,250 | 2,813   |
| 133b                          | Cotton        | do             |       |       |       |       |       |       |       | 1,350 | 2,050 | 1,300 | 1,250 | 5,950  | 1,488   |
| 134                           | Sweetclover   | do             |       |       |       | 2,350 | 3,100 | 2,200 |       |       |       |       |       | 5,300  | 2,650   |
| 160                           | Kafir         | Spring plowed  |       |       |       |       |       |       | 2,100 | 950   | 1,700 | 1,050 | 1,000 | 4,700  | 1,175   |
| 161                           | do            | Fall plowed    |       |       | 700   | 3,200 | 3,350 | 2,600 | 2,450 | 1,950 | 1,950 | 1,250 | 1,300 | 18,050 | 2,256   |
| 162                           | do            | Spring plowed  |       |       | 950   | 2,700 | 3,200 | 2,350 | 2,200 | 1,750 | 2,050 | 1,000 | 1,350 | 16,600 | 2,075   |
| 163a                          | Milo          | Fall plowed    |       |       | 550   | 2,700 | 1,750 | 2,800 | 2,400 | 1,650 | 2,200 |       |       | 13,500 | 2,250   |
| 163b                          | Peterita      | do             |       |       |       |       |       |       |       |       |       | 1,200 | 1,050 | 2,250  | 1,125   |
| 164                           | Winter wheat  | Spring plowed  |       |       | 2,050 | 5,200 | 2,000 | 2,250 |       |       |       |       |       | 9,450  | 3,150   |
| 166a                          | Milo          | do             |       |       | 750   | 5,950 | 2,000 | 2,250 | 2,600 | 1,400 | 1,650 |       |       | 15,850 | 2,642   |
| 166b                          | Peterita      | do             |       |       |       |       |       |       |       |       |       | 1,000 | 900   | 1,900  | 950     |
| 167                           | Kafir         | do             |       |       | 1,300 | 6,700 | 2,900 | 2,150 | 2,300 | 1,500 | 1,800 | 950   | 1,150 | 19,450 | 2,431   |
| 169a                          | Milo          | do             |       |       | 700   | 3,100 | 3,150 | 1,760 | 2,500 | 1,500 | 1,800 |       |       | 13,750 | 2,292   |
| 169b                          | Peterita      | do             |       |       |       |       |       |       |       |       |       | 1,100 | 1,250 | 2,350  | 1,175   |
| 196                           | Cotton        | Fall plowed    |       |       |       |       |       |       | 2,550 | 1,500 | 2,520 |       |       | 8,970  | 1,794   |
| 199                           | Sorgo         | do             |       |       |       | 4,000 | 2,750 | 2,550 | 2,350 |       |       |       |       | 7,650  | 2,550   |
| 200a                          | Sudan grass   | do             |       |       |       | 3,500 | 3,150 | 2,200 | 2,100 | 950   |       |       |       | 8,400  | 2,100   |
| 200b                          | Cotton        | Spring plowed  |       |       |       |       |       |       |       |       | 2,050 | 1,250 | 1,100 | 4,400  | 1,467   |
| 201                           | do            | Fall plowed    |       |       |       | 3,200 | 3,600 | 2,500 | 2,000 | 1,350 |       |       |       | 14,000 | 2,000   |
| 202                           | do            | Spring plowed  |       |       |       | 3,300 | 2,750 | 2,400 | 2,150 |       | 2,350 | 1,000 | 1,200 | 7,300  | 2,433   |
| 203a                          | Kafir         | do             |       |       |       | 3,800 | 2,850 | 2,200 | 2,200 |       |       |       |       | 7,250  | 2,417   |
| 203b                          | Cotton        | Fall plowed    |       |       |       |       |       |       |       | 1,400 | 2,000 | 1,450 | 1,150 | 4,600  | 1,533   |
| 204                           | Kafir         | Fall listed    |       |       |       | 3,200 | 1,800 | 1,350 | 1,350 |       |       |       |       | 4,500  | 1,500   |
| 265a                          | Winter wheat  | Fall plowed    |       |       |       | 5,700 | 2,450 | 1,850 | 2,050 |       |       |       |       | 6,350  | 2,117   |
| 265b                          | do            | Spring plowed  |       |       |       |       |       |       |       | 1,050 | 1,950 | 1,400 | 1,000 | 5,400  | 1,850   |
| 276                           | Kafir         | Fall plowed    | 7,300 | 6,000 | 1,200 | 5,500 | 3,250 | 3,850 | 2,550 | 1,750 | 2,450 | 1,300 | 950   | 28,800 | 2,880   |
| 284                           | do            | Spring plowed  |       |       |       | 3,050 | 3,600 | 1,850 | 2,400 |       |       |       |       | 7,850  | 2,617   |
| 285                           | do            | do             |       |       |       | 2,700 | 3,250 | 1,500 | 2,400 |       |       |       |       | 7,150  | 2,383   |
| 364a                          | Winter wheat  | Fall plowed    |       |       |       | 5,850 | 3,400 | 2,050 | 2,300 |       |       |       |       | 7,750  | 2,583   |
| 364b                          | do            | Spring plowed  |       |       |       |       |       |       |       | 1,250 | 2,450 | 1,150 | 950   | 5,800  | 1,450   |
| 394                           | Cotton        | do             |       |       |       | 3,500 | 3,000 | 3,050 | 2,000 | 1,250 | 2,300 | 1,450 | 1,150 | 14,200 | 2,029   |
| 395                           | do            | do             |       |       |       | 2,900 | 3,250 | 2,700 | 2,050 | 1,250 | 2,250 | 1,500 | 1,150 | 14,150 | 2,021   |
| Average                       |               |                |       | 6,000 | 1,200 | 4,239 | 3,170 | 2,343 | 2,135 | 1,318 | 2,089 | 1,203 | 1,129 | 9,527  | 2,072   |
| 260                           | Winter wheat  | Fall plowed    |       |       |       | 2,000 | 800   | 400   | 400   |       |       |       |       | 1,600  | 533     |
| 390                           | Cotton        | do             |       |       |       | 2,400 | 2,000 | 1,500 | 1,150 |       |       |       |       | 4,650  | 1,550   |
| <b>SUDAN GRASS</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 200                           | Cotton        | Fall plowed    |       |       |       | 9,570 | 9,550 | 4,450 | 3,200 |       |       |       |       | 17,200 | 5,733   |
| <b>BROOMCORN (BRUSH)</b>      |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Broomcorn     | Spring plowed  | 0     | 370   | 0     | 750   | 440   | 0     | 0     | 223   | 460   | 0     | 420   | 2,663  | 266     |
| B                             | do            | Fall plowed    | 0     | 370   | 0     | 850   | 590   | 450   | 0     | 150   | 450   | 0     | 450   | 3,320  | 332     |
| E                             | do            | Subsoiled      | 120   | 330   | 0     | 750   | 580   | 700   | 0     | 290   | 410   | 0     | 410   | 3,440  | 344     |
| F                             | do            | Spring listed  | 30    | 290   | 0     | 600   | 450   | 0     | 0     | 156   | 340   | 0     | 450   | 2,236  | 229     |
| G                             | do            | do             | 30    | 230   | 0     | 500   | 470   | 650   | 210   | 157   | 480   | 0     | 360   | 3,107  | 311     |
| V                             | do            | Spring plowed  | 470   | 400   | 0     | 650   | 770   | 770   | 250   | 370   | 510   | 0     | 600   | 4,320  | 432     |
| Average                       |               |                |       | 340   | 0     | 683   | 550   | 428   | 77    | 219   | 442   | 0     | 450   | 3,189  | 319     |
| C or D                        | Fallow        | Fallowed       | 60    | 280   | 0     | 650   | 610   | 700   | 0     | 183   | 460   | 0     | 440   | 3,323  | 332     |
| <b>PEANUT TOTAL</b>           |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 283                           | Kafir         | Spring plowed  |       |       |       | 2,850 | 0     | 2,850 | 2,050 |       |       |       |       | 4,900  | 1,633   |
| 393                           | Cotton        | do             |       |       |       | 2,970 | 3,980 | 3,000 | 1,450 | 3,140 | 2,880 | 0     | 0     | 14,450 | 2,064   |
| Average                       |               |                |       |       |       |       | 1,990 | 2,925 | 1,750 | 3,140 | 2,880 | 0     | 0     | 9,675  | 1,849   |
| <b>PEANUTS</b>                |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 283                           | Kafir         | Spring plowed  |       |       |       | 560   | 0     | 730   | 0     |       |       |       |       | 730    | 243     |
| 393                           | Cotton        | do             |       |       |       | 1,020 | 1,780 | 750   | 0     | 570   | 580   | 0     | 0     | 3,680  | 526     |
| Average                       |               |                |       |       |       |       | 890   | 740   | 0     | 570   | 580   | 0     | 0     | 2,205  | 385     |
| <b>COTTON LINT</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Cotton        | Spring plowed  | 100   | 220   | 0     | 360   | 446   | 150   | 110   | 90    | 300   | 190   | 310   | 2,176  | 218     |
| B                             | do            | Fall plowed    | 80    | 220   | 0     | 380   | 485   | 150   | 110   | 120   | 290   | 200   | 310   | 2,265  | 227     |
| E                             | do            | Subsoiled      | 90    | 240   | 0     | 350   | 451   | 130   | 150   | 130   | 320   | 280   | 250   | 2,341  | 234     |
| F                             | do            | Fall listed    | 70    | 170   | 0     | 280   | 299   | 100   | 90    | 100   | 230   | 150   | 310   | 1,769  | 177     |
| Ga                            | do            | Spring listed  | 60    | 150   | 0     | 220   | 295   | 60    | 90    |       |       |       |       | 815    | 136     |
| Gb                            | do            | do             |       |       |       |       |       |       |       | 70    | 200   | 140   | 300   | 710    | 178     |
| W                             | do            | Fall plowed    | 70    | 200   | 0     | 310   | 522   | 170   | 150   | 122   | 230   | 220   | 320   | 2,294  | 229     |
| Average                       |               |                |       | 200   | 0     | 317   | 416   | 127   | 117   | 105   | 270   | 203   | 307   | 1,767  | 200     |
| C or D                        | Fallow        | Fallowed       | 90    | 250   | 0     | 350   | 361   | 120   | 150   | 130   | 270   | 250   | 350   | 2,261  | 226     |
| 133                           | Sweetclover   | Fall plowed    |       |       |       |       |       |       |       | 110   | 70    | 450   | 170   | 930    | 186     |
| 134                           | do            | do             |       |       |       |       |       |       |       | 180   | 90    | 480   | 163   | 1,103  | 221     |
| 142                           | Corn          | Spring plowed  |       |       |       |       |       |       |       | 120   | 88    | 410   | 240   | 1,078  | 216     |
| 166                           | Cowpeas       | Disked         |       |       |       |       |       |       |       | 180   | 110   | 350   | 250   | 1,100  | 220     |
| 167                           | do            | do             |       |       |       |       |       |       |       | 140   | 70    | 360   | 220   | 1,010  | 202     |
| 195a                          | Kafir         | Fall plowed    |       |       |       | 300   | 432   | 170   | 130   | 110   |       |       |       | 842    | 211     |
| 195b                          | Cotton        | do             |       |       |       |       |       |       | 120   | 80    | 250   | 220   | 200   | 900    | 180     |
| 196a                          | Winter wheat  | do             |       |       |       |       |       |       |       |       | 270   | 170   | 200   | 640    | 213     |
| 196b                          | Kafir         | do             |       |       |       | 270   | 442   | 160   | 150   | 70    |       |       |       | 822    | 206     |
| 197                           | Winter barley | do             |       |       |       |       |       |       |       |       | 250   | 167   | 200   | 617    | 206     |
| 197                           | Winter wheat  | do             |       |       |       | 440   | 323   | 120   | 110   | 130   | 250   | 160   | 210   | 1,303  | 186     |
| 198a                          | Kafir         | do             |       |       |       | 300   | 352   | 130   | 120   | 120   |       |       |       | 722    | 181     |
| 198b                          | Winter wheat  | do             |       |       |       |       |       |       |       |       | 250   | 170   | 220   | 640    | 213     |
| 198b                          | Cotton        | do             |       |       |       |       |       |       |       | 110   | 211   | 180   | 260   | 761    | 190     |
| 199a                          | Cowpeas       | do             |       |       |       | 399   | 292   | 140   | 170   |       |       |       |       | 602    | 201     |
| 199b                          | Winter wheat  | do             |       |       |       |       |       |       |       | 130   | 190   | 180   | 190   | 560    | 187     |
| 200a                          | Cowpeas       | do             |       |       |       | 400   | 342   | 120   | 130   |       |       |       |       | 592    | 197     |
| 200b                          | Winter wheat  | Spring plowed  |       |       |       |       |       |       |       | 100   | 200   | 210   | 280   | 690    | 230     |
| 201a                          | Kafir         | Fall plowed    |       |       |       | 340   | 394   | 150   | 120   | 80    |       |       |       | 744    | 186     |
| 201b                          | Barley        | do             |       |       |       |       |       |       |       |       | 230   | 230   | 200   | 660    | 220     |
| 202a                          | Kafir         | Spring plowed  |       |       |       | 230   | 361   | 130   | 140   | 100   |       |       |       | 731    | 183     |



## CROP YIELDS AT THE LAWTON (OKLA.) FIELD STATION—Continued

TABLE 72.—Annual acre yields of specified crops grown in rotations on individual plots at Lawton, Okla., in one or more years from 1916 to 1926—Continued

| Crop and rotation No. or plot | Previous crop     | Tillage method | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | Total | Average |
|-------------------------------|-------------------|----------------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|
| <b>COTTON 11NT—continued</b>  |                   |                |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 202b                          | Cowpeas           | Green manured  |      |      |      |      |      |      |      |      | 260  | 290  | 220  | 770   | 257     |
| 203a                          | do                | Spring plowed  |      |      |      | 340  | 385  | 120  | 130  |      |      |      |      | 635   | 212     |
| 203b                          | Winter wheat      | Fall plowed    |      |      |      |      |      |      |      | 130  | 230  | 200  | 240  | 670   | 223     |
| 204a                          | Cowpeas           | Fall listed    |      |      |      | 290  | 342  | 60   | 110  | 140  |      |      |      | 652   | 163     |
| 204b                          | Winter wheat      | Fall plowed    |      |      |      |      |      |      |      |      | 75   | 90   | 220  | 385   | 128     |
| 205a                          | Milo              | do             | 150  | 360  | 0    | 400  | 434  | 160  | 200  | 120  | 450  |      |      | 2,124 | 266     |
| 205b                          | Feterita          | do             |      |      |      |      |      |      |      |      |      | 200  | 410  | 610   | 305     |
| 260                           | Winter wheat      | Spring plowed  |      |      |      |      |      |      |      | 100  | 320  | 130  | 180  | 730   | 183     |
| 274a                          | do                | Fall plowed    | 200  | 240  | 0    | 410  | 254  | 110  | 150  |      |      |      |      | 1,164 | 194     |
| 274b                          | Corn              | do             |      |      |      |      |      |      |      | 220  | 450  | 230  | 230  | 1,130 | 283     |
| 275a                          | Winter wheat      | do             | 230  | 310  | 0    | 330  | 417  | 200  | 160  |      |      |      |      | 1,417 | 236     |
| 275b                          | Cotton            | do             |      |      |      |      |      |      | 170  | 190  | 550  | 230  | 240  | 1,210 | 303     |
|                               | Sorgo             | do             |      |      |      |      |      |      |      | 80   | 530  | 190  | 290  | 1,090 | 273     |
| 276                           | Cowpeas           | do             | 130  | 200  | 0    | 450  | 539  | 120  | 150  | 140  | 400  | 340  | 270  | 2,609 | 261     |
| 280                           | Kafir             | Spring plowed  |      |      |      | 460  | 413  | 170  | 120  |      |      |      |      | 703   | 234     |
| 390a                          | Cowpeas and kafir | do             |      |      |      | 470  | 416  | 190  | 110  | 120  |      |      |      | 836   | 209     |
| 390b                          | Winter rye        | Green manured  |      |      |      |      |      |      |      |      | 267  | 420  | 300  | 987   | 329     |
| 391                           | Oats              | Fall plowed    |      |      |      | 420  | 427  | 180  | 120  | 160  | 320  | 280  | 270  | 1,757 | 251     |
| 392a                          | Corn              | Spring plowed  |      |      |      | 420  | 423  | 140  | 160  | 90   |      |      |      | 813   | 203     |
| 392b                          | Winter wheat      | Fall plowed    |      |      |      |      |      |      |      |      | 330  | 270  | 320  | 920   | 307     |
| 393                           | Peanuts           | Spring plowed  |      |      |      | 420  | 427  | 160  | 130  | 110  | 370  | 280  | 340  | 1,817 | 260     |
| 394                           | Cowpeas           | do             |      |      |      | 380  | 458  | 160  | 200  | 90   | 380  | 320  | 290  | 1,898 | 271     |
| 395                           | do                | do             |      |      |      | 410  | 420  | 140  | 180  | 90   | 360  | 330  | 300  | 1,820 | 260     |
| 396                           | do                | Green manured  |      |      |      | 420  | 435  | 150  | 200  | 110  | 380  | 330  | 310  | 1,915 | 274     |
| 397                           | Fallow            | Fallow         |      |      |      | 400  | 266  | 150  | 180  | 140  | 350  | 250  | 340  | 1,676 | 329     |
| 398                           | do                | do             |      |      |      | 380  | 280  | 170  | 200  | 170  | 350  | 380  | 330  | 1,920 | 274     |
| 399                           | do                | do             |      |      |      | 370  | 223  | 160  | 140  | 110  | 350  | 270  | 210  | 1,463 | 209     |
| Average                       |                   |                |      | 278  | 0    | 398  | 380  | 146  | 148  | 103  | 332  | 235  | 249  | 1,058 | 226     |
| <b>Check plots:</b>           |                   |                |      |      |      |      |      |      |      |      |      |      |      |       |         |
| 1                             | Cotton            | Fall plowed    |      |      |      | 390  | 489  | 210  | 110  | 110  | 278  | 240  | 220  | 1,657 | 237     |
| 2                             | do                | do             |      |      |      | 350  | 470  | 170  | 90   | 90   | 267  | 225  | 190  | 1,502 | 215     |
| 3                             | do                | do             |      |      |      | 380  | 470  | 150  | 110  | 110  | 160  | 180  | 200  | 1,380 | 197     |
| Average                       |                   |                |      |      |      |      | 476  | 177  | 103  | 103  | 235  | 215  | 203  | 1,513 | 216     |

## CROP YIELDS AT THE BIG SPRING (TEX.) FIELD STATION

TABLE 73.—Annual acre yields of specified crops grown in rotations on individual plots at Big Spring, Tex., in one or more years from 1915 to 1926

[For descriptions of rotations, see pages 32-43. Replicated rotations or plots are designated by the suffixed letters, a, b, c, etc., in column 1, indicating the number of times such replications were used. For climatic conditions 1916 to 1924 see Figure 46 (p. 70), Miscellaneous Circular No. 81. Yields of total weight of corn, millet, sorgo, kafir, Sudan grass, cowpea hay, broomcorn brush, peanut hay, peanuts, and seed cotton are given in pounds; all other yields are stated in bushels]

| Crop and rotation No. or plot   | Previous crop | Tillage method    | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|---------------------------------|---------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>WINTER WHEAT<sup>1</sup></b> |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                               | Winter wheat  | Late fall plowed  |       | 2.7   | 5.8   | 0     | 2.3   | 17.8  | 0.7   |       | 1.3   | 1.0   | 0     | 3.5   | 32.4   | 3.6     |
| B                               | do            | Early fall plowed |       | 2.8   | 7.2   | 0     | 1.7   | 16.5  | 1.8   |       | 2.5   | 2.2   | 0     | 7.3   | 39.2   | 4.4     |
| Average                         |               |                   |       |       | 6.5   | 0     | 2.0   | 17.2  | 1.3   |       | 1.9   | 1.6   | 0     | 5.4   | 35.8   | 4.0     |
| C or D                          | Fallow        | Fallow            |       | 2.8   | 7.2   | 0     | 11.2  | 14.3  | 5.8   |       | 2.0   | 6.2   | 0     | 9.7   | 56.4   | 6.3     |
| 164                             | Cowpeas       | Disked            |       |       |       |       | 1.3   | 13.8  | 5.5   |       | 0     | 5.3   | 0     | 10.7  | 36.6   | 5.2     |
| 166                             | Winter wheat  | Fall plowed       |       |       |       |       | 6.2   | 7.8   | 7.0   |       | 1.0   | 3.5   | 0     | 10.3  | 29.6   | 4.9     |
| 167                             | Cowpeas       | Disked            |       |       |       |       | 2.3   | 18.3  | 7.0   |       | 4.7   | 3.3   | 0     | 10.2  | 45.8   | 6.5     |
|                                 | do            | do                |       |       |       |       | 3.5   | 20.2  | 6.2   |       | 5.0   | 10.2  | 0     | 18.5  | 63.6   | 9.1     |
| Average                         |               |                   |       |       |       |       | 2.4   | 15.0  | 6.4   |       | 2.7   | 5.6   | 0     | 12.4  | 43.9   | 6.4     |
| E                               | Winter wheat  | Subsoiled         |       | 4.7   | 10.3  | 0     | 21.3  | 18.8  | .8    |       | 1.5   | 2.5   | 0     | 4.8   | 60.0   | 6.7     |
| F                               | do            | Fall listed       |       | 3.3   | 10.8  | 0     | 23.7  | 21.3  | 1.8   |       | 1.3   | 1.7   | 0     | 5.5   | 66.1   | 7.3     |
| G                               | do            | do                |       | 2.0   | 6.3   | 0     | 9.5   | 18.2  | 2.2   |       | 1.7   | 2.7   | 0     | 9.0   | 49.6   | 5.5     |
| Average                         |               |                   |       |       | 9.1   | 0     | 18.2  | 19.4  | 1.6   |       | 1.5   | 2.3   | 0     | 6.4   | 58.6   | 6.5     |
| <b>CORN TOTAL</b>               |               |                   |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                               | Corn          | Spring plowed     | 1,120 | 1,060 | 40    | 820   | 3,820 | 2,660 | 1,520 | 2,240 | 1,340 | 300   | 500   | 1,370 | 15,670 | 1,425   |
| B                               | do            | Fall plowed       | 3,860 | 2,800 | 1,100 | 860   | 4,140 | 5,000 | 2,440 | 1,630 | 2,630 | 1,010 | 1,700 | 2,570 | 25,880 | 2,353   |
| Average                         |               |                   |       | 1,930 | 570   | 840   | 3,980 | 3,830 | 1,980 | 1,935 | 1,985 | 655   | 1,100 | 1,970 | 20,775 | 1,889   |
| C or D                          | Fallow        | Fallow            | 3,560 | 2,500 | 1,590 | 2,400 | 4,560 | 5,630 | 2,780 | 1,930 | 2,670 | 1,100 | 1,790 | 3,830 | 30,750 | 2,795   |
| 207                             | Cowpeas       | Green manured     | 4,820 | 2,630 | 870   | 610   | 5,103 | 5,930 | 2,680 | 2,180 | 2,800 | 930   | 2,700 | 2,750 | 29,200 | 2,655   |
| 209a                            | Pinto beans   | Fall listed       | 5,820 | 2,660 | 870   | 2,440 | 4,303 | 6,000 | 2,220 | 2,460 | 2,350 |       |       |       | 23,300 | 2,913   |
| 209b                            | Sudan grass   | do                |       |       |       |       |       |       |       |       |       | 740   | 730   | 1,570 | 2,320  | 1,160   |
| 210                             | Pinto beans   | Fall plowed       | 5,020 | 3,300 | 1,710 | 2,540 | 5,603 | 6,330 | 2,860 | 2,400 | 2,850 | 1,230 | 3,250 | 5,050 | 36,520 | 3,320   |
| Average                         |               |                   |       | 2,880 | 1,150 | 1,863 | 4,800 | 6,067 | 2,587 | 2,347 | 2,667 | 1,080 | 2,233 | 3,133 | 22,835 | 2,512   |
| E                               | Corn          | Subsoiled         | 3,480 | 2,760 | 1,010 | 1,320 | 4,400 | 5,800 | 2,740 | 2,060 | 3,100 | 980   | 1,830 | 3,610 | 29,640 | 2,695   |
| F                               | do            | Spring listed     | 3,630 | 2,660 | 0     | 400   | 2,400 | 3,820 | 1,600 | 1,410 | 750   | 200   | 520   | 1,640 | 15,400 | 1,400   |
| G                               | do            | do                | 4,340 | 1,960 | 40    | 250   | 3,100 | 4,200 | 1,540 | 1,080 | 2,040 | 550   | 380   | 1,610 | 16,750 | 1,523   |
| Average                         |               |                   |       | 2,460 | 350   | 657   | 3,300 | 4,607 | 1,960 | 1,517 | 1,963 | 577   | 910   | 2,297 | 20,597 | 1,873   |

<sup>1</sup> Winter wheat, in 1922, not sown previous fall because of drought. Plots sown to millet in spring.



TABLE 73.—Annual acre yields of specified crops grown in rotations on individual plots at Big Spring, Tex., in one or more years from 1915 to 1926—Continued

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## CROP YIELDS AT THE BIG SPRING (TEX.) FIELD STATION—Continued

TABLE 73.—Annual acre yields of specified crops grown in rotations on individual plots at Big Spring, Tex., in one or more years from 1915 to 1926—Continued

| Crop and rotation No. or plot | Previous crop | Tillage method | 1915  | 1916  | 1917  | 1918  | 1919  | 1920  | 1921  | 1922  | 1923  | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------|---------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| <b>MILO GRAIN—con.</b>        |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| <b>Check plots:</b>           |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 1                             | Milo          | Plowed         |       |       | 1.1   | 0     | 49.1  |       | 20.7  | 0     | 14.0  | 0     | 2.8   | 15.3  | 101.9  | 12.7    |
| 2                             | do            | do             |       |       | 1.9   | 0     | 48.6  |       | 19.0  | 0     | 18.8  | 0     | 3.1   | 9.3   | 98.8   | 12.4    |
| 3                             | do            | do             |       |       | 5     | 0     | 38.4  |       | 23.3  | 12.4  | 23.3  | 0     | 2.6   | 12.2  | 112.2  | 14.0    |
| 4                             | do            | do             |       |       | 3.4   | 0     | 59.8  |       | 32.9  | 24.1  | 41.9  | 5     | 3.4   | 21.6  | 184.4  | 23.0    |
| 5                             | do            | do             |       |       | 0     | 0     | 35.5  |       | 25.9  | 22.6  | 25.0  | 0     | 2.2   | 15.2  | 126.4  | 15.8    |
| 6                             | do            | do             |       |       | 4     | 0     | 36.9  |       | 32.4  | 27.1  | 35.0  | 1.4   | 3.8   | 18.8  | 155.4  | 19.4    |
| 7                             | do            | do             |       |       | 1.0   | 5.3   | 65.0  |       | 28.1  | 28.4  | 23.4  | 1.7   | 5.7   | 16.9  | 173.5  | 21.7    |
| 8                             | do            | do             |       |       | 9.8   | 7.1   | 70.2  |       | 24.8  | 24.8  | 32.6  | 3     | 4.5   | 12.8  | 177.3  | 22.2    |
| 9                             | do            | do             |       |       | 9.5   | 5.3   | 64.7  |       | 29.1  | 34.0  | 40.9  | 2.9   | 6.2   | 14.3  | 197.4  | 24.7    |
| 10                            | do            | do             |       |       | 5     | 2.4   | 45.9  |       | 25.9  | 25.9  | 35.7  | 3.4   | 7.4   | 11.7  | 158.3  | 19.8    |
| 11                            | do            | do             |       |       | 2.8   | 3.1   | 56.9  |       | 25.9  | 26.0  | 36.7  | 7.9   | 4.3   | 15.2  | 176.0  | 22.0    |
| 12                            | do            | do             |       |       | 1.9   | 4.5   | 41.4  |       | 18.8  | 26.7  | 28.1  | 2.8   | 3.6   | 10.3  | 136.2  | 17.0    |
| 13                            | do            | do             |       |       |       |       | 31.0  |       | 16.0  | 23.6  | 22.2  | 3.1   | 4.0   | 7.8   | 76.7   | 12.8    |
| 14                            | do            | do             |       |       |       |       | 31.2  |       | 16.7  | 20.9  | 27.8  | 1.9   | 2.4   | 9.5   | 79.2   | 13.2    |
| 15                            | do            | do             |       |       | 1.7   | 0     | 47.4  |       | 29.3  | 24.8  | 36.0  | 20.0  | 17.2  | 24.8  | 199.5  | 24.9    |
| 16                            | do            | do             |       |       | 10.4  | 0     | 53.1  |       | 27.6  | 31.7  | 33.3  | 14.1  | 20.5  | 28.1  | 208.4  | 26.1    |
| 17                            | do            | do             |       |       | 13.3  | 0     | 41.6  |       | 26.2  | 19.3  | 37.6  | 12.4  | 9.8   | 16.9  | 163.8  | 20.5    |
| 18                            | do            | do             |       |       | 15.5  | 3.6   | 55.0  |       | 33.4  | 34.5  | 44.8  | 9.8   | 10.9  | 17.2  | 209.2  | 26.2    |
| 19                            | do            | do             |       |       | 1.7   | 0     | 32.8  |       | 22.8  | 29.5  | 40.9  | 4.1   | 10.2  | 10.2  | 150.5  | 18.8    |
| 20                            | do            | do             |       |       | 1.0   | 0     | 34.5  |       | 24.8  | 15.7  | 33.3  | 14.3  | 16.2  | 16.9  | 155.7  | 19.5    |
| 21                            | do            | do             |       |       |       | 0     | 30.7  |       | 19.3  | 25.0  | 31.4  | 9.7   | 6.9   | 16.6  | 139.6  | 19.9    |
| 22                            | do            | do             |       |       |       | 3.3   | 27.6  |       | 18.3  | 21.7  | 33.4  | 5.7   | 3.4   | 13.1  | 123.2  | 17.6    |
| Average                       |               |                |       |       |       | 1.7   | 46.8  |       | 24.6  | 22.7  | 31.6  | 5.2   | 6.9   | 15.2  | 150.2  | 19.3    |
| <b>KAFIR TOTAL</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 9,180 | 3,160 | 205   | 1,050 | 6,700 | 4,900 | 3,160 | 3,220 | 1,600 | 3,560 | 3,080 | 2,800 | 31,375 | 2,852   |
| B                             | do            | Fall plowed    | 7,700 | 6,040 | 80    | 1,250 | 6,940 | 6,480 | 3,720 | 3,140 | 2,400 | 3,220 | 4,320 | 3,500 | 41,090 | 3,735   |
| Average                       |               |                |       | 4,570 | 143   | 1,150 | 6,820 | 5,690 | 3,440 | 3,180 | 2,060 | 2,390 | 3,700 | 3,150 | 36,233 | 3,294   |
| <b>C or D</b>                 |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow        | Fallowed       | 8,960 | 9,580 | 1,520 | 2,000 | 8,560 | 5,700 | 4,680 | 3,800 | 2,740 | 3,700 | 5,780 | 5,630 | 53,690 | 4,881   |
| 160                           | Cowpeas       | Spring plowed  |       |       |       | 760   | 4,020 | 6,440 | 2,480 | 4,070 | 3,540 | 3,820 | 4,270 | 3,200 | 31,820 | 3,978   |
|                               | Kafir         | do             |       |       |       | 1,100 | 4,620 | 6,300 | 3,060 | 2,630 | 3,200 | 4,080 | 3,160 | 3,200 | 30,250 | 3,781   |
| 161                           | Milo          | Fall plowed    |       |       |       | 1,340 | 5,020 | 6,400 | 3,300 | 2,860 | 2,820 | 3,280 | 4,300 | 2,980 | 30,960 | 3,870   |
| 162                           | do            | Spring plowed  |       |       |       | 580   | 4,620 | 6,100 | 1,500 | 3,560 | 3,400 | 3,000 | 2,080 | 4,850 | 29,110 | 3,639   |
| 163                           | Cowpeas       | Fall plowed    |       |       |       | 2,590 | 4,820 | 6,030 | 2,920 | 3,040 | 2,580 | 3,000 | 6,750 | 3,830 | 33,020 | 4,128   |
| 165                           | Milo          | Spring plowed  |       |       |       | 2,790 | 4,840 | 6,200 | 1,800 | 3,900 | 2,260 | 2,720 | 3,070 | 3,630 | 28,420 | 3,553   |
| 167                           | Winter wheat  | do             |       |       |       | 1,700 | 7,120 | 5,060 | 3,100 | 3,640 | 3,080 | 2,700 | 2,440 | 3,080 | 30,220 | 3,778   |
| 168                           | Fallow        | Fallowed       |       |       |       | 1,540 | 6,030 | 5,400 | 4,100 | 2,760 | 3,800 | 3,500 | 5,110 | 6,280 | 37,070 | 4,634   |
| 169                           | Cowpeas       | Spring plowed  |       |       |       | 2,300 | 7,500 | 6,100 | 4,000 | 3,000 | 3,400 | 3,700 | 4,600 | 3,400 | 35,700 | 4,463   |
| Average                       |               |                |       |       |       |       | 5,404 | 6,013 | 2,918 | 3,271 | 3,120 | 3,311 | 3,976 | 3,828 | 31,841 | 3,980   |
| E                             | Kafir         | Subsoiled      | 8,160 | 7,900 | 280   | 1,240 | 8,200 | 6,620 | 3,680 | 3,770 | 2,700 | 3,300 | 4,010 | 3,500 | 45,200 | 4,109   |
| F                             | do            | Spring listed  | 7,300 | 3,980 | 0     | 910   | 5,460 | 3,800 | 2,080 | 2,500 | 3,480 | 3,700 | 2,640 | 2,750 | 31,300 | 2,845   |
| G                             | do            | do             | 8,400 | 6,240 | 230   | 1,490 | 6,320 | 3,900 | 2,540 | 2,940 | 2,440 | 3,260 | 2,610 | 3,630 | 35,600 | 3,236   |
| Average                       |               |                |       | 6,040 | 170   | 1,213 | 6,660 | 4,773 | 2,767 | 3,070 | 2,873 | 3,420 | 3,087 | 3,293 | 37,367 | 3,397   |
| <b>KAFIR GRAIN</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Kafir         | Spring plowed  | 45.0  | 13.3  | 0     | 0     | 36.3  | 25.8  | 17.0  | 19.8  | 6.7   | 2.7   | 13.0  | 18.3  | 152.9  | 13.9    |
| B                             | do            | Fall plowed    | 30.3  | 11.2  | 0     | 0     | 45.0  | 31.5  | 20.7  | 18.7  | 13.8  | 7.7   | 15.3  | 23.3  | 187.2  | 17.0    |
| Average                       |               |                |       | 12.3  | 0     | 0     | 40.7  | 28.7  | 18.9  | 19.3  | 10.3  | 5.2   | 14.2  | 20.8  | 170.1  | 15.5    |
| <b>C or D</b>                 |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow        | Fallowed       | 42.2  | 28.5  | 4.7   | 0     | 38.7  | 26.2  | 26.3  | 19.8  | 14.2  | 10.3  | 19.3  | 33.8  | 221.8  | 20.2    |
| 160                           | Cowpeas       | Spring plowed  |       |       |       | 0     | 22.2  | 34.3  | 12.8  | 23.5  | 20.8  | 10.5  | 20.0  | 23.0  | 167.1  | 20.9    |
|                               | Kafir         | do             |       |       |       | 0     | 29.7  | 34.0  | 16.8  | 14.8  | 18.0  | 8.7   | 14.3  | 20.0  | 156.3  | 19.5    |
| 161                           | Milo          | Fall plowed    |       |       |       | 0     | 39.5  | 34.3  | 17.5  | 16.8  | 17.7  | 6.7   | 20.3  | 26.8  | 176.6  | 22.1    |
| 162                           | do            | Spring plowed  |       |       |       | 0     | 27.7  | 31.3  | 6.5   | 21.7  | 20.5  | 3.7   | 7.2   | 34.0  | 152.6  | 19.1    |
| 163                           | Cowpeas       | Fall plowed    |       |       |       | 1.0   | 30.0  | 33.8  | 15.8  | 16.2  | 16.8  | 6.0   | 31.2  | 16.0  | 165.8  | 20.7    |
| 165                           | Milo          | Spring plowed  |       |       |       | 1.0   | 29.0  | 34.5  | 7.8   | 17.5  | 14.8  | 4.3   | 13.3  | 25.0  | 146.2  | 18.3    |
| 167                           | Winter wheat  | do             |       |       |       | 0     | 24.5  | 22.8  | 15.8  | 21.5  | 18.0  | 5.0   | 10.0  | 21.0  | 138.6  | 17.3    |
| 168                           | Fallow        | Fallowed       |       |       |       | 0     | 33.3  | 28.2  | 20.3  | 13.8  | 19.5  | 10.5  | 21.5  | 34.3  | 181.4  | 22.7    |
| 169                           | Cowpeas       | Spring plowed  |       |       |       | 0     | 41.0  | 25.2  | 21.5  | 16.1  | 18.2  | 6.7   | 17.0  | 21.3  | 167.0  | 20.9    |
| Average                       |               |                |       |       |       |       | 30.4  | 30.9  | 15.6  | 18.0  | 18.3  | 6.9   | 17.2  | 24.6  | 161.3  | 20.2    |
| E                             | Kafir         | Subsoiled      | 31.2  | 22.8  | .3    | 0     | 45.8  | 27.5  | 21.3  | 21.7  | 13.2  | 7.2   | 12.7  | 21.7  | 194.2  | 17.7    |
| F                             | do            | Spring listed  | 39.3  | 16.8  | 0     | 0     | 28.8  | 17.3  | 10.5  | 14.3  | 17.3  | 8.3   | 9.2   | 15.5  | 138.0  | 12.5    |
| G                             | do            | do             | 44.7  | 25.2  | .8    | 0     | 32.7  | 17.8  | 13.8  | 17.5  | 13.7  | 6.7   | 9.7   | 25.0  | 162.9  | 14.8    |
| Average                       |               |                |       | 21.6  | .4    | 0     | 35.8  | 20.9  | 15.2  | 17.8  | 14.7  | 7.4   | 10.5  | 20.7  | 165.0  | 15.0    |
| <b>FETERITA GRAIN</b>         |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| A                             | Feterita      | Spring plowed  | 30.0  | 7.1   | 0     | 0     | 30.0  | 8.3   | 3.6   | 19.5  | 6.6   | 2.6   | 4.0   | 17.4  | 99.1   | 9.0     |
| B                             | do            | Fall plowed    | 30.7  | 8.1   | 0     | 0     | 34.5  | 25.3  | 14.7  | 19.5  | 15.7  | 4.7   | 7.1   | 25.0  | 154.6  | 14.1    |
| Average                       |               |                |       | 7.6   | 0     | 0     | 32.3  | 16.8  | 9.2   | 19.5  | 11.2  | 3.7   | 5.6   | 26.2  | 126.9  | 11.6    |
| <b>C or D</b>                 |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
|                               | Fallow        | Fallowed       | 35.7  | 22.8  | 7.0   | 0     | 37.6  | 23.3  | 19.7  | 21.4  | 20.7  | 9.8   | 12.8  | 28.4  | 203.5  | 18.5    |
| <b>PINTO BEANS</b>            |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 209                           | Peanuts       | Fall listed    | 5.9   | 2.5   | 1.2   | 0     | 0     | 6.5   | 0     | 0     |       |       |       |       | 10.2   | 1.5     |
| 210                           | do            | Fall plowed    | 9.5   | 9.2   | 1.3   | 0     | 0     | 8.5   | 0     | 0     | 0     | 0     | 0     | 0     | 19.0   | 1.7     |
| Average                       |               |                |       | 5.9   | 1.3   | 0     | 0     | 7.5   | 0     | 0     | 0     | 0     | 0     | 0     | 14.6   | 1.6     |
| <b>COWPEA HAY</b>             |               |                |       |       |       |       |       |       |       |       |       |       |       |       |        |         |
| 160                           | Kafir         | Spring plowed  |       |       |       | 500   | 1,700 | 2,300 | 1,820 | 1,700 | 1,380 | 220   | 420   | 1,400 | 10,940 | 1,368   |
| 161                           | do            | Fall plowed    |       |       |       | 1,220 | 1,880 | 2,740 | 2,260 | 2,100 | 1,540 | 160   | 860   | 1,320 | 12,860 | 1,608   |
| 162                           | do            | Spring plowed  |       |       |       | 560   | 2,000 | 2,360 | 2,000 | 2,100 | 1,480 | 0     | 240   | 1,100 | 11,280 | 1,410   |
| 163                           | Milo          | Fall plowed    |       |       |       | 820   | 1,860 | 2,280 | 2,100 | 2,180 | 1,380 | 0     | 1,340 | 1,080 | 12,220 | 1,528   |
| 164                           | Winter wheat  | Spring plowed  |       |       |       | 960   | 1,660 | 2,760 | 1,400 | 1,800 | 1,520 | 0     | 320   | 1,040 | 10,500 | 1,313   |
| 166                           | Milo          | do             |       |       |       | 940   | 1,320 | 3,960 | 1,760 | 1,920 | 1,420 | 0     | 340   | 920   | 11,640 | 1,455   |
| 167                           | Kafir         | do             |       |       |       | 1,100 | 1,200 | 3,700 | 1,960 | 1,920 | 1,440 | 0     | 520   | 1,180 | 11,920 | 1,490   |
| 169                           | Milo          | do             |       |       |       | 1,300 | 1,540 | 3,680 | 1,800 | 1,960 | 1,620 | 1,120 | 560   | 1,200 | 13,490 | 1,686   |



## CROP YIELDS AT THE BIG SPRING (TEX.) FIELD STATION—Continued

TABLE 73.—Annual acre yields of specified crops grown in rotations on individual plots at Big Spring, Tex., in one or more years from 1915 to 1926—Continued

| Crop and rotation No. or plot       | Previous crop | Tillage method | 1915   | 1916  | 1917 | 1918  | 1919   | 1920  | 1921  | 1922             | 1923             | 1924  | 1925  | 1926  | Total  | Average |
|-------------------------------------|---------------|----------------|--------|-------|------|-------|--------|-------|-------|------------------|------------------|-------|-------|-------|--------|---------|
| <b>COWPEA HAY—CON.</b>              |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| 201                                 | Cotton        | Fall plowed    | 5,800  | 2,200 | 190  | 480   | 1,700  | 2,900 | 2,140 | 2,060            | 1,640            | 180   | 1,240 | 1,860 | 16,590 | 1,508   |
| 202                                 | do            | Spring plowed  | 5,780  | 1,950 | 680  | 1,700 | 1,980  | 2,900 | 2,240 | 2,060            | 1,520            | 200   | 660   | 1,460 | 17,350 | 1,577   |
| 203                                 | Milo          | do             | 6,380  | 1,000 | 180  | 620   | 1,480  | 2,680 | 2,420 | 2,360            | 1,660            | 0     | 400   | 1,500 | 14,300 | 1,300   |
| 204                                 | do            | Fall listed    | 5,600  | 1,600 | 0    | 580   | 1,300  | 2,300 | 1,900 | 1,240            | 1,540            | 260   | 1,120 | 1,920 | 13,760 | 1,251   |
| 217                                 | Millet        | Spring plowed  | 7,250  | 2,450 | 80   | 480   | 1,660  | 2,860 | 2,300 | 1,760            | 1,560            | 0     | 500   | 1,040 | 14,690 | 1,335   |
| 218                                 | do            | Fall plowed    | 6,900  | 3,000 | 90   | 880   | 1,500  | 3,600 | 3,000 | 1,820            | 1,760            | 0     | 720   | 1,240 | 17,610 | 1,601   |
| 222                                 | Cotton        | Spring plowed  | 7,930  | 3,350 | 70   | 1,160 | 1,120  | 4,100 | 1,980 | 2,300            | 1,880            | 0     | 600   | 1,480 | 18,040 | 1,640   |
| 223                                 | Milo          | do             | 5,650  | 2,550 | 10   | 760   | 1,860  | 2,600 | 2,200 | 2,140            | 1,540            | 0     | 520   | 1,240 | 15,420 | 1,402   |
| 231                                 | Cotton        | Fall plowed    | 6,650  | 2,310 | 60   | 660   | 1,620  | 3,140 | 2,880 | 1,860            | 1,640            | 0     | 1,320 | 1,620 | 17,110 | 1,555   |
| 234                                 | Peanuts       | do             | 6,850  | 2,300 | 530  | 860   | 1,740  | 2,920 | 2,180 | 2,060            | 1,620            | 0     | 1,360 | 1,820 | 17,390 | 1,581   |
| 236                                 | Milo          | do             | 7,350  | 2,200 | 150  | 940   | 1,420  | 3,700 | 2,620 | 2,240            | 1,400            | 0     | 1,320 | 2,360 | 18,350 | 1,668   |
| 272                                 | Cotton        | Spring plowed  | 5,650  | 2,100 | 100  | 1,520 | 1,340  | 4,000 | 2,380 | 2,200            | 1,500            | 0     | 920   | 1,380 | 17,44  | 1,585   |
| 273                                 | Milo          | do             | 7,500  | 2,600 | 50   | 800   | 2,220  | 3,780 | 2,740 | 2,060            | 2,820            | 0     | 550   | 600   | 17,730 | 1,612   |
| 301                                 | do            | do             |        |       |      |       | 1,900  | 3,420 | 2,180 | 1,900            | 1,660            | 0     | 300   | 1,180 | 10,640 | 1,520   |
| Average                             |               |                |        | 2,278 | 168  | 880   | 1,624  | 3,122 | 2,194 | 1,988            | 1,592            | 97    | 734   | 1,361 | 14,603 | 1,500   |
| <b>SUDAN GRASS</b>                  |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| 208                                 | Milo          | Fall plowed    | 12,550 | 6,160 | 310  | 1,540 | 10,340 | 9,160 | 3,880 | 4,020            | 2,540            | 1,820 | 6,420 | 5,920 | 52,110 | 4,737   |
| 209                                 | Peanuts       | Fall listed    |        |       |      |       |        |       |       |                  | 5,440            | 3,400 | 3,800 | 6,380 | 13,580 | 4,327   |
| Average                             |               |                |        | 6,160 | 310  | 1,540 | 10,340 | 9,160 | 3,880 | 4,020            | 3,990            | 2,610 | 5,110 | 6,150 | 32,845 | 4,632   |
| <b>BROOMCORN (BRUSH)</b>            |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| A                                   | Broomcorn     | Spring plowed  | 900    | 325   | 0    | 0     | 750    | 190   | 30    | 390              | 140              | 50    | 50    | 170   | 2,095  | 190     |
| B                                   | do            | Fall plowed    | 765    | 475   | 220  | 0     | 600    | 630   | 350   | 400              | 390              | 190   | 330   | 530   | 4,115  | 374     |
| Average                             |               |                |        | 400   | 110  | 0     | 675    | 410   | 190   | 395              | 265              | 120   | 190   | 350   | 3,105  | 282     |
| C or D                              | Fallow        | Fallowed       | 960    | 600   | 260  | 340   | 680    | 730   | 450   | 430              | 430              | 150   | 400   | 610   | 5,080  | 462     |
| E                                   | Broomcorn     | Subsoiled      | 750    | 515   | 175  | 0     | 580    | 650   | 360   | 430              | 320              | 150   | 290   | 610   | 4,080  | 371     |
| F                                   | do            | Spring listed  | 1,000  | 100   | 0    | 0     | 355    | 285   | 150   | 440              | 290              | 230   | 140   | 400   | 2,390  | 217     |
| G                                   | do            | do             | 850    | 110   | 30   | 60    | 540    | 310   | 270   | 500              | 280              | 240   | 130   | 450   | 2,920  | 265     |
| Average                             |               |                |        | 242   | 68   | 20    | 492    | 415   | 260   | 457              | 297              | 207   | 187   | 487   | 3,130  | 284     |
| <b>PEANUT HAY TOTAL<sup>2</sup></b> |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| 208                                 | Sudan grass   | Fall plowed    |        | 2,800 | 475  | 840   | 9,340  | 4,000 | 1,700 | 1,530            | ( <sup>3</sup> ) | 330   | 4,040 | 2,960 | 28,015 | 2,802   |
| 209                                 | Corn          | Fall listed    |        | 2,660 | 95   | 2,530 | 10,700 | 6,000 | 1,880 | 1,500            | <sup>3</sup> 220 | 500   | 4,550 | 4,400 | 35,035 | 3,185   |
| 210                                 | do            | do             |        | 2,600 | 435  | 2,070 | 7,540  | 6,200 | 2,140 | 780              | ( <sup>3</sup> ) | 520   | 4,790 | 5,100 | 32,175 | 3,218   |
| 233                                 | Cotton        | Fall plowed    |        | 2,980 | 255  | 1,950 | 10,600 | 6,500 | 2,380 | 0                | 1,600            | 970   | 4,650 | 3,360 | 35,245 | 3,204   |
| 234                                 | Cowpeas       | do             |        | 2,820 | 235  | 1,650 | 10,300 | 5,900 | 1,640 | 0                | 820              | 830   | 6,100 | 7,120 | 37,415 | 3,401   |
| 235                                 | Milo          | do             |        | 1,160 | 48   | 1,100 | 8,750  | 4,860 | 1,960 | ( <sup>2</sup> ) | 1,240            | 620   | 3,500 | 3,200 | 26,438 | 2,403   |
| Average                             |               |                |        |       | 257  | 1,690 | 9,538  | 5,577 | 1,950 | 762              | 970              | 628   | 4,605 | 4,357 | 32,387 | 3,036   |
| <b>PEANUTS</b>                      |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| 208                                 | Sudan grass   | Fall plowed    |        | 700   | 230  | 80    | 1,140  | 930   | 75    | 0                | ( <sup>4</sup> ) | 50    | 640   | 1,230 | 5,075  | 508     |
| 209                                 | Corn          | Fall listed    |        | 690   | 0    | 300   | 1,610  | 1,670 | 50    | 0                |                  | 40    | 1,000 | 1,040 | 6,600  | 640     |
| 210                                 | do            | Fall plowed    |        | 790   | 110  | 340   | 1,190  | 1,720 | 210   | 0                |                  | 80    | 1,360 | 1,100 | 6,900  | 690     |
| 233                                 | Cotton        | do             |        | 820   | 10   | 170   | 1,640  | 1,880 | 160   | 0                |                  | 150   | 1,250 | 1,100 | 7,180  | 718     |
| 234                                 | Cowpeas       | do             |        | 790   | 55   | 80    | 1,470  | 1,520 | 100   | 0                |                  | 100   | 1,870 | 1,750 | 7,735  | 774     |
| 235                                 | Milo          | do             |        | 320   | 0    | 30    | 1,850  | 1,190 | 95    | ( <sup>2</sup> ) |                  | 120   | 1,070 | 840   | 5,515  | 552     |
| Average                             |               |                |        |       | 68   | 200   | 1,483  | 1,485 | 115   |                  |                  | 90    | 1,198 | 1,177 | 6,500  | 647     |
| <b>SEED COTTON</b>                  |               |                |        |       |      |       |        |       |       |                  |                  |       |       |       |        |         |
| A                                   | Cotton        | Spring plowed  | 2,080  | 20    | 30   | 270   | 1,380  | 990   | 310   | 560              | 480              | 243   | 410   | 410   | 5,103  | 464     |
| B                                   | do            | Fall plowed    | 1,590  | 450   | 20   | 220   | 1,270  | 1,550 | 470   | 530              | 1,040            | 579   | 690   | 790   | 7,609  | 692     |
| Average                             |               |                |        | 235   | 25   | 245   | 1,325  | 1,270 | 390   | 545              | 760              | 411   | 550   | 600   | 6,356  | 578     |
| C or D                              | Fallow        | Fallowed       | 1,600  | 570   | 40   | 260   | 1,520  | 1,260 | 670   | 500              | 1,080            | 663   | 1,050 | 1,010 | 8,623  | 784     |
| E                                   | Cotton        | Subsoiled      | 1,660  | 400   | 80   | 280   | 1,520  | 1,640 | 530   | 610              | 1,060            | 569   | 930   | 950   | 8,569  | 779     |
| F                                   | do            | Fall listed    | 2,030  | 400   | 90   | 300   | 1,470  | 1,290 | 590   | 560              | 1,140            | 599   | 825   | 780   | 8,044  | 731     |
| G                                   | do            | Spring listed  | 1,980  | 40    | 10   | 280   | 1,250  | 920   | 400   | 610              | 800              | 289   | 590   | 300   | 5,489  | 499     |
| W                                   | do            | Fall plowed    | 1,530  | 340   | 50   | 180   | 1,250  | 1,390 | 530   | 630              | 1,130            | 446   | 765   | 880   | 7,591  | 690     |
| Average                             |               |                |        | 295   | 58   | 260   | 1,373  | 1,310 | 513   | 603              | 1,033            | 476   | 778   | 728   | 7,413  | 675     |
| 201                                 | Milo          | Fall plowed    | 1,810  | 340   | 0    | 90    | 1,230  | 1,420 | 520   | 610              | 910              | 491   | 1,060 | 610   | 7,281  | 662     |
| 202                                 | do            | Spring plowed  | 2,140  | 40    | 180  | 160   | 1,040  | 1,390 | 380   | 640              | 830              | 553   | 340   | 680   | 6,233  | 567     |
| 203                                 | Cowpeas       | do             | 1,920  | 30    | 20   | 120   | 1,000  | 1,320 | 530   | 660              | 870              | 573   | 506   | 450   | 6,079  | 553     |
| 204                                 | do            | Fall listed    | 1,540  | 160   | 10   | 40    | 950    | 1,180 | 360   | 540              | 860              | 529   | 1,100 | 1,090 | 6,819  | 620     |
| 205                                 | Milo          | Spring plowed  | 1,610  | 80    | 0    | 120   | 1,210  | 1,390 | 490   | 640              | 840              | 580   | 780   | 630   | 6,760  | 615     |
| 206                                 | do            | do             | 1,520  | 50    | 130  | 200   | 1,030  | 1,410 | 600   | 630              | 1,100            | 650   | 600   | 730   | 7,130  | 648     |
| 222                                 | Fallow        | Fallowed       | 2,190  | 40    | 20   | 250   | 1,340  | 1,360 | 610   | 610              | 1,160            | 530   | 1,210 | 830   | 7,960  | 724     |
| 223                                 | Cowpeas       | Spring plowed  | 1,260  | 10    | 10   | 100   | 1,100  | 1,330 | 450   | 580              | 1,030            | 531   | 610   | 480   | 6,231  | 566     |
| 231                                 | do            | Fall plowed    | 1,660  | 450   | 10   | 190   | 990    | 1,490 | 500   | 520              | 990              | 561   | 1,160 | 930   | 7,791  | 708     |
| 232                                 | Milo          | do             | 1,850  | 270   | 20   | 140   | 960    | 1,520 | 290   | 640              | 790              | 349   | 590   | 460   | 6,029  | 548     |
| 233                                 | Peanuts       | do             | 1,480  | 720   | 90   | 430   | 850    | 1,390 | 520   | 670              | 1,050            | 529   | 800   | 540   | 7,589  | 690     |
| 272                                 | Fallow        | Fallowed       | 1,640  | 60    | 40   | 190   | 1,080  | 1,270 | 580   | 590              | 1,240            | 523   | 1,010 | 850   | 7,353  | 668     |
| 273                                 | Cowpeas       | Spring plowed  | 1,540  | 30    | 80   | 150   | 1,110  | 1,720 | 430   | 600              | 880              | 290   | 520   | 500   | 6,310  | 574     |
| Average                             |               |                |        | 175   | 47   | 161   | 1,068  | 1,399 | 482   | 610              | 966              | 515   | 791   | 675   | 6,890  | 626     |
| Cot-1                               | Cotton        | Spring listed  |        |       |      |       |        |       |       |                  | 650              | 417   | 410   | 490   | 1,317  | 439     |
| Cot-2                               | do            | Disked         |        |       |      |       |        |       |       |                  | 650              | 475   | 330   | 510   | 1,315  | 438     |
| Cot-3                               | do            | do             |        |       |      |       |        |       |       |                  | 655              | 505   | 390   | 580   | 1,473  | 763     |
| Cot-4                               | do            | Spring plowed  |        |       |      |       |        |       |       |                  | 740              | 433   | 360   | 530   | 1,323  | 441     |
| Cot-5                               | do            | do             |        |       |      |       |        |       |       |                  | 650              | 433   | 310   | 460   | 1,203  | 401     |
| Cot-6                               | do            | do             |        |       |      |       |        |       |       |                  | 745              | 478   | 340   | 450   | 1,268  | 423     |
| Cot-7                               | do            | do             |        |       |      |       |        |       |       |                  | 670              | 475   | 370   | 480   | 1,325  | 442     |
| Cot-8                               | do            | do             |        |       |      |       |        |       |       |                  | 590              | 393   | 250   | 340   | 983    | 328     |
| Cot-9                               | do            | do             |        |       |      |       |        |       |       |                  | 720              | 411   | 250   | 380   | 1,041  | 347     |
| Average                             |               |                |        |       |      |       |        |       |       |                  |                  | 447   | 334   | 469   | 1,250  | 447     |

<sup>1</sup> Peanut crop in 1915 and in rotation 235 in 1922 destroyed by rabbits.<sup>2</sup> Hay spoiled by rain after harvest.<sup>3</sup> Nuts destroyed by ravens.

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